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Discrete Negative Emotions Generated in an Interactive Advertisement:

An Exploration of Control as a Medium Effect

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Discrete Negative Emotions Generated in an Interactive Advertisement: An Exploration of Control as a Medium Effect

by

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Dedication

This dissertation is dedicated to my parents, Jorge and Rebeca and to my Angelicas. All of them, in their own special way, are my teachers of how to be a good son, husband and father.

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Discrete Negative Emotions Generated in Interactive Advertising: An Exploration of Control as a Medium Effect

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Some researchers believe that affective experiences on interactive media are different than in traditional media or in real life. This study ‘s objective is to explain emotion elicitation in interactive media by applying appraisal theories.

One of the main contributions of appraisal theories to the study of emotions is their capacity to forecast which discrete emotion will be elicited by an event. The prediction of emotion elicitation is based on a relatively small number of appraisal dimensions that an individual makes about an event.

Two dimensions from appraisal theories (control, who controls the event, and agency, who caused the event) were extracted for this study to explore how combinations of control and agency generate discrete emotions during an interaction with an ad that results in a negative outcome. The expected emotions to be found in the study were regret (low control/self), guilt (high control /self), dislike (low control/other), and anger (high control/other).

Appraisal theory assumes that every discrete emotion has different effects on motivation, attitudes and behavior. In this study, the distinct nature of the relationship between emotion and these constructs were hypothesized for each emotion.

The hypotheses were tested in a 2 (high/low control) x 2 (self/other agency) x 2 (high/low involvement) factorial design. The results indicate that the experimental combination of control, operationalized as control of the information flow of an interactive ad, and agency, operationalized as who caused the selection of the interactive ad, elicited higher levels of dislike and regret in the expected conditions. Anger and guilt were not statistically different across the conditions of the study.

The effects of the discrete emotions described by structural equation modeling were, as expected, diverse. In the structural equation model developed for guilt, this emotion linked significantly and positively with attitudes toward the ad exclusively in the low involvement condition. The dislike model indicated a significant and negative relationship between this emotion and cognitions and attitudes toward the ad. The model for anger suggested that this emotion had a significant and negative relationship with cognitions about the ad. Finally, regret had no effect on the model's attitudinal, cognitive or behavioral measures.

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CHAPTER 1

INTRODUCTION

The Yahoo family of Web sites is the number one online destination of the world and the leading brand of the WWW (Yahoo 2002). Yet the value of this corporation is currently a pale 9% of its March 2000 capitalization ($80 billion vs. $7.5 billon). In those heady days of the Internet craze targets of Yahoo's then deep pockets were companies like Disney and CBS (Swisher 2000).

In 2000 the future looked bright for many Internet companies like Yahoo as they offered to online consumers new and exciting products and services, many of those for free. Thirty months later, the plethora of free content and services that Web surfers viewed as the norm is disappearing due to the Internet's companies need to make a profit (Cope 2001, Wingfield 2002).

As in other mass media, the primary assumption to make a profit on the WWW was advertising revenue. This has been disputed by many examples of success based on business models like the Wall Street Journal's Web site that has always charged for its content (Elkin 2002). Similarly, many other sites are trying to make money through a combination of advertising and subscription services. In many ways the emerging model for Web sites is similar to cable channels' profit model (Wingfield 2002)

This fundamental shift and reorganization of the commercial use of the WWW might lead to a growing number of dissatisfied consumers. Some examples of profit-driven decisions that might hurt the relationship of online consumers and companies are unresponsive consumer service, the charging for previously free services and loss of

control of users of their personal information or how to access certain services (Ellis 2002).

The creation of negative feelings while interacting with Web sites and online advertising is a common reality of 2002. Many consumers get angry or grow frustrated at ad interstitials that stop the display of a Web page to recommend a certain brand and at the pesky pop up ads for surveillance cameras (Rosenbaum 2002). Other consumers grow frustrated by the confusing "floor plans" of online stores (Frangos 2002). There are also Web sites that spawn pop ups of other Web sites at incredible speed rates or the need to access Web email through pages laden with ads. Some ads even risk the creation of a negative feeling by containing frustratingly difficult games. Probably the epitome of the Internet obnoxiousness is the Spam that clogs millions of inboxes all over the world (Crowe 2002). Furthermore, some researchers criticize the Web since it is a medium that can boost users' social isolation or lower their self-esteem (Bush and Gilbert 2002).

The Web is a great communication tool but the emotions and moods created might not be always positive. Studies of the Internet as a medium for advertising, shopping, and entertainment have grown in parallel to the increase in the number of Internet users. The research questions of these studies are extremely varied, and at rather diverse levels of analysis. For example, researchers are looking for meaningful patterns in the clicks and keyboard strokes of site visitors (e.g., Hoqe and Lohse 1999, Lohse, Bellman and Johnson 2000). Other scholars study the characteristics of Web sites (e.g., Ghose and Dou 1998, Ha and James 1998, McMillan 2000, Stevenson, Bruner and Kumar 2000, Stout, Villegas and Kim 2001), while many others study the Internet as an advertising or communication medium.

The perception of the Internet as a mass medium (Morris and Ogan 1996) has allowed for the application of traditional theories such as uses and gratifications (e.g., Eighmey 1997, Flanagin and Metzger 2001, Luo 2002), and the application of traditional models of persuasion to the traits of interactive advertising (e.g., Cho 1999, Rossitter and Bellman 1999). Finally, specific issues of interactive advertising have been studied by analyzing banner ads' characteristics (e.g., size, position) or rich media effects (e.g., Lee and Cho 2001) on traditional effectiveness measures (e.g., Li and Bokovac1999).

Unfortunately, it seems that much of the research on the Internet focuses on cognitive and informational dimensions (e.g., Ariely 2000, Lynch and Ariely 2000, Ward and Lee 2000). However, there have been a small number of papers that have studied the Internet, in an advertising or e-commerce framework, as a generator of affect. Some examples of the interest in affect are new measures of attitudes for Web sites (Chen and Wells 1998, Chen, Clifford and Wells 2002), or the use of more traditional attitudinal measures toward interactive advertising (Macias 2001, Wu 2000). In terms of stronger, more focused feelings, there have been studies about flow (a feeling of intense focus that can lead a person to lose track of time) while surfing the Web (Novak, Hoffman, and Yung 2000), as well as an exploratory study of the effects of emotions on attitudinal measures while shopping on line (Villegas and Stout 2002).

This lack of a considerable body of research on new media's affective consequences is problematic in that studies on affect, and its influence in cognition, allow for a fuller understanding of the consumer, both on and off line (e.g. Luce 1998, Shiv and Fedorikhin 1999).

Compared to research about the Internet, the area of affect in consumer behavior has been extensively researched, particularly since the early 1980s (For reviews see Bagozzi, Gopinath, and Prashanth 1999, Cohen and Areni 1991, Erevelles 1998). More than 20 years of research has yielded a better understanding of affect in consumer behavior contexts, although there are some limitations. For example, one problem has been the lack of agreement as to what exactly constitutes an emotion. As a result, affect, emotion, feelings and moods have been used as synonyms by some researchers (Bagozzi et al. 1999).

Another obstacle in the full understanding of affect is the scarcity of studies that explore feelings as discrete emotions or moods (i.e., anger, sadness, happiness) instead of dimensions clustered by valence (i.e., positive, negative) or other aspects (i.e., Pleasure, Arousal, Dominance). An illustration of the paucity of the study of discrete emotions or moods comes from the recent and classical reviews of emotions. These reviews demonstrate the influences of affect by presenting an exclusive two-dimensional approach to feelings (i.e., positive and negative) without acknowledgment of the effects of discrete emotions (Berkowitz 2000, Isen 1989, Wegener and Petty 1996).

This is considered a major problem for researchers like DeSteno, Petty, Wegener, and Rucker (2000), Nabi (1999), Dillard and Peck (2001), Ragunathan (2000), and Ragunathan and Pham (1999). The authors, in a rather persuasive manner, have presented the strong implications of studying the area of affect beyond its valence. Notwithstanding this stated need, the effect of specific emotional states in persuasion has not been researched thoroughly.

This research presents the exploration of two issues that are of particular interest to interactive advertising research. First, the elicitation of discrete negative emotions via interactive messages will be presented. Second, the understanding of some discrete emotions' effects on attitudes and behavior important to advertisers will be probed. In order to accomplish these objectives, this dissertation contains a statement of the problem, a literature review of emotions studied in advertising and marketing contexts, an explanation of interactive advertising, and one of its particularly important elements, control. Next, a series of hypotheses developed from the literature review, and framed in appraisal theory of emotions are presented. Subsequently, the proposed methodology, that outlines pilot studies and the experiment are presented. The following section analyzes the results and explains the limitations and conclusion of the study.

Statement of the Problem

This dissertation is not about the present, nor is it about the distant future. There is an issue of control concerning almost every technology related to any media. Couch potatoes' activities, or lack of, will always exist. However, the age of interactivity, brought to our homes and offices through technologies like TiVO, WWW, Web-enhanced cell phones, and other devices, can make the user a more active member of the communication process.

The drive to create a more active relationship between viewers and content is not something that will be done in the far future or exclusively on the WWW. Technologies to create more meaningful and involving interactions are being deployed now. In Europe, for example, there has been a series of commercial tryouts of interactive TV. The levels of interactivity range from traditional TV game shows that include some type of

interaction via telephone between the game and people playing at home (The Economist 2002) to ads that use a computer interface on TV sets to prompt people to action while watching commercials (White 2002).

The perception of the audience as active individuals is not a new idea; almost 15 years ago Heeter (1989), for one, proposed the audience as co-creator of messages. However, recently the topic of control in interactive advertising emerged as one of the most important issues in interactive media as it is patent from the first issue of the *Journal of Interactive Advertising.* Pavlou and Stewart (2000) and Rodgers and Thorson (2000) underlined the importance of consumers' control of the communication process between them and companies. In general terms, control is the consumers' ability to expose themselves to messages that they regard as important or interesting as well as the control of specific information of the online ads or Web site (Lombard and Snyder Duch 2001).

The control of the information, narrative flow, or content is in the hands of the users in videogames, the WWW, and to some degree, in those who use Web TV or TiVO. On the other hand, viewers who watch TV can control which ads to view by zapping or they can regulate the sound volume. Similarly, people using a VCR can watch programs at anytime, stop the show or zap advertising altogether. This is control, no doubt about it. However, the control brought by interactive media is in the medium. The content in TV, no matter how many channels are available, is unalterable. In other words, the presentation of information or the story line cannot be changed on TV. People can watch TV ads that they love as many times as they like provided that they tape them, or they can avoid ads that they dislike by zapping the channel. Still, only interactive media can

allow for the modification of the content, the personalization of the message, or the environment.

The control of information may elicit emotions with different qualities to users of interactive media. In the current communication paradigm, processing of TV and other media create affective reactions through the content (i.e., Olney, Holbrook and Batra 1991). For example, an advertisement for Budweiser might elicit humor by continuing the saga of the "what's up" guys. However, when the user controls the internal narratives, or information flow, traditional one-way theories of communication might have a limited capacity in explaining the affect elicited during the interaction between audience and message. Control of options, of information flow, might summon different emotions than those obtained in low-control situations like TV watching. Now the focus is not exclusively in the content of the medium but also in the quality and outcomes of the interaction. More specifically, an interactive rich-media ad might be humorous not just because of the "what's up" guys' shenanigans but also because users might provoke a particular joke through their clicking on a certain section of the ad or by the way that they traversed the different sections of the message.

The understanding of discrete emotions elicited in new media is also the focus of this study. In order to explore these emotions, the framework of appraisal theory of emotions was used. This research is based on appraisal theories since they describe emotion elicitation as a multi-dimensional evaluation of a situation that triggers discrete emotions. These discrete emotions have diverse effects on attitudes and behavior (Roseman 2001). One of these evaluative dimensions is control of the event. This

dimension, as well as agency, was transposed from the realm of real-world events and interpersonal relationships to online interaction.

CHAPTER 2

THEORETICAL BACKGROUND

In this section, the argument of how interactive advertising differs from traditional advertising is presented. First, a general understanding of what interactive advertising is, and the studies that analyze its effects on users will be presented. Then, an exploration of interactivity and one of its main traits –control- and control's implications will be presented. Discussion of control of a medium will lead to a discussion of control as a dimension of appraisal theories of emotion.

Interactive Advertising

An increasing number of researchers are trying to understand the differences and similarities of the advertising imbedded in traditional and interactive media. Unfortunately, there is no consensus of exactly which media deserves the interactive advertising label. For example, WWW-based ads, such as interstitials and banner ads, are unquestionably considered advertising. However, full Web sites can be viewed as a space for advertisements or advertising *per se* (Rodgers and Thorson 2000). Many support the argument in favor of Web sites as stimuli that should be studied by advertising researchers, rather than from a broader mass communication perspective. Some academics study sites as part of an advertising strategy (Chen and Wells 1998, Chen et al. 2002, Coyle and Thorson 2001, Ghose and Dhou 1998, Nowak, Shamp, Hollander and Cameron 1999, Singh and Dalal 1999, Wu 2000); others view Web sites as advertising space that interacts with interactive ads (Bruner and Kumar 2000, Stevenson, et al. 2000).

Still it is possible to define conclusively Web sites or other interfaces as advertisements. In the recently created *Journal of Interactive Advertising,* Leckenby and Li (2000) define interactive advertising as:

> "Paid and unpaid presentation and promotion of products, services and ideas by an identified sponsor through mediated means involving mutual action between consumers and producers."

This definition has many implications for this dissertation. First, mutual action can be interpreted as a belief that interactivity is one of the most representative characteristics of advertising found in new media. Second, as other researchers agree (Rodgers and Thorson 2000, Singh and Dalal 1999, Wu 2000), presentation and promotion of products, services, and ideas mean that a complete Web site might be seen as interactive advertising. Finally, Leckenby and Li (2000) do not limit interactive advertising to the WWW. The use of the term "mediated" leaves open the possibility of applying the term of interactive advertising to many current (e.g., Web-based PADs or cell phones) or future technologies (e.g., e-paper, wearable devices).

These conclusions concerning the definition of interactive advertising lead to two important assumptions of this dissertation. First, the study of interactive media should not be limited to the current, or popular, practices and effects of the WWW. Second, the idea of an advertisement as a short message with specific limits (full page in newspapers, 30 seconds in TV or radio, or even a 234x60 pixels banner ad) can be a limiting factor of the study in terms of what interactive technologies might be able to do in the future.

One example of the dynamics of advertising on the Web is a new ad unit. Messaging Plus, currently used in sites like CNET and Salon, is a 300-by-360 pixels rich media ad that can be seen as an interactive site right inside the Web site (Heim 2001,

Mara 2001). This new ad unit heralds a possible new way to entice consumers to interact with persuasive messages beyond the traditional banner ad, or the more complex full Web site. One of the main traits of Messaging Plus is its capability of being "more interactive". However, a question remains: What does interactivity mean?

Interactivity

Interactivity is the buzzword and construct used to understand the new media's intrinsic characteristics. There are definitions that classify interactivity as a cluster of tools found on a site (Coyle and Thorson 2001, Ghose and Dou 1998, Ha and James 1998, Stout, et al. 2001), a communication process where more interactivity means that a machine simulates more closely the behavior of a real person engaged in conversation (Rafaeli 1988), responses of a system that are fast and based on past interactions (Alba et al. 1997, Novak, et al. 2000), or combinations of constructs like Wu's (2000) aggregation of perceptions of control, responsiveness, and personalization.

Unfortunately, the multi-dimensional approach advocated by many researchers might obscure the real effect of interactivity. For example, in Coyle and Thorson's (2001) experiment interactivity was manipulated as a combination of Mapping (an image map that is clickable/not clickable) and Range (number of options available). The results of this study show that high levels of interactivity are linked to more positive attitudes toward the Web site. A question that rises from the methodology in this study is what is the effect of Mapping or the effect of Range on attitudes? It is not possible to discern from this study's results which of these interactivity dimensions has a stronger effect or even if there is a negative effect on attitudes by one of the two manipulated traits that was removed by the positive attitudes of the other trait.

An answer to this problem is the exploration of interactivity in a very focused manner by delimiting interactive traits to be examined and then studying them with the objective of in-depth understanding. One approach to interactivity as a specific trait studies the construct of control in mass media or consumer behavior contexts (Ariely 1998 and 2000, Aylesworth, Goodstein and Unni 2000, Bezjian-Avery, Calder and Iacobucci 1998, Eveland and Dunwoody 2001, Roehm and Haugtvedt 1999).

Notwithstanding divergent definitions, it seems that control is an element of interactivity common in many theoretical perspectives. For instance, in the ever-present definition by Steuer (1992), control plays a central role.

> "(interactivity is) the extent to which users can participate in modifying the form and content of a mediated environment in real time" (p. 75).

Even though Ha and James (1998) do not directly use the term "control", they present a five-dimensional definition of interactivity in which one facet can be interpreted as control. The authors propose that choice is one of the dimensions of interactivity. This dimension is defined as "the availability of choice and unrestrained navigation" (p. 462). For example, a site that offers users different options on how to traverse the site, options of language displayed, the use of frames would be high in the dimension of "choice".

Bezjian-Avery, et al. (1998) define interactive advertising from a control-centered perspective as advertisements that allow a customer to "actively traverse" the information. In other words, a person exposed to an interactive ad has greater control over the order and flow of information. Similarly, Ariely (1998) in his dissertation, (although not in his *Journal of Consumer Research* paper based on the dissertation (Ariely 2000)), indicates the importance of control of information flow in the definition

of interactivity. In Neuman's (1992) concept of interactivity as a trait of mediated communication, this concept is viewed as increased control of the sender and receiver of the communication process.

Roehm and Haugtvedt (1999) put forth one of the most control-centered conceptualizations of interactivity, although their definition is not as constricted as control of information flow. The authors define interactivity as two controllable traits of a message (form or content) that can be implemented by the two main players of the communication process (customer or marketer). In this schema, interactivity is higher when customers control the form (i.e., use of frames) and the content (i.e., visual-oriented information) of the communication process.

In a more abstract and media-based definition of interactivity, Vorderer (2000) also conceptualizes this media trait as control. This author views interactivity as a continuum where in one extreme media has exclusively an approach/avoidance capability (i.e., off/on button) while on the other side of the range a real-time interaction with the medium is offered. For example, a TV show like ER would create low levels of interactivity since people can only choose to avoid (turn off the TV, switch channels) or approach the show. On the other hand, a videogame based on ER that allows people to play a role in the solution of the characters' problems might create higher levels of interactivity.

As researchers have indicated, interactivity, nor control, are new constructs in mass media and advertising (Cho 1999, Heeter 1989). The next section presents how the advent of videocassette recorders (VCR) and remote control devices (RCD) created a

stream of research that attempts to understand the effects of these technological developments in mass communication and advertising.

Control in traditional media

The study of traditional media (the new media of yesteryear), such as VCRs and RCDs, offers a wealth of information that allows for a better understanding of how technological advances applied to mass media brought more active control of the viewing process to the audience (Eastman and Newton 1995).

One of the most interesting theoretical constructs applied to the study of control of mass media is that of the motivation that drives people to watch a program. Rubin (1984) regards TV users as active members who can have two distinct goals: ritualistic or instrumental. A TV audience can be motivated by a ritualistic motive, characterized by shifting the focus of TV use from the content to a routine. Simply put, people turn on the TV as a habit that is nonselective and demands little planning. In contrast, TV audiences can be influenced by an instrumental motive, which requires more planning, is more active, and requires more cognitive effort to think about the program that is being watched (Perse 1990). In other words, one motive for TV watching is to have background noise or distraction while in the other motive there is a specific plan to watch, and be involved by a program.

Using Rubin's (1984) motives of TV use as a framework, Perse (1998) investigated cognitive and affective reasons for channel- switching. The author found that ritual motives were significantly linked to channel-switching. One of the most interesting results of Perse's study involved negative affect. The author was surprised to find that people who had negative affect elicited by a program are driven to pay more attention to

the program, invest more cognitive capacity, have higher levels of arousal, and more importantly, have a significant desire to switch channels.

These results are not surprising when interpreted from the perspective of emotions as useful information for survival (Plutchik 1980). Plutchik, among many others psychoevolutionists, considers affect to serve as a monitor of well-being; therefore, negative emotions disrupt current behavior and focus attention in a stronger manner than positive emotions.

More useful to advertisers are the studies of zipping (i.e., using a VCR to fast forward an ad) and zapping (i.e., using a remote control to change channels). Researchers have profiled the zappers based on demographics (e.g., tend to be males, younger) and motives (e.g., to see what else is on, to avoid commercials) (e.g., Heeter and Greenberg 1985).

Besides the study of audience characteristics, there are two competing perspectives in the advertising literature on the effect of these avoidance technologies. On one side, researchers like Greene (1988) and Eastman and Newton (1995) view VCRs and RCDs as a small inconvenience for advertisers, and a not-so common practice among the audience. Encouragingly, Stout and Burda (1989) hypothesized that zipped commercials do not lose their recall power because viewers pay more attention to these ads to avoid zipping the show being watched.

On the other side of the argument, Cronin and Menelly (1992) found upsettingly high levels of block zipping. That is, zippers avoided two or more commercials. Further, subjects in the survey and experiment avoided commercials with no regard whatsoever as

to the content of the ads. The advertisements were avoided based exclusively because they were ads.

Researchers have also studied the effects of advertising in new media like pre-recorded movies in videocassettes (Lee and Katz 1993).The authors found a strong negative attitude toward ads in videocassettes. This attitudinal measure was slightly moderated by ads that were distinct, or linked in some manner to the film contained in the videocassette. From Lee and Katz's findings it would seem that the more control of the content using a VCR, and usually the payment made for the movie as a purchase or rental, would entitle viewers to an advertising-free medium.

Similar to Perse's (1998) study of channel switching during a program, Olney, et al. (1991) delved into emotions' effect on zipping and zapping of commercials using the Pleasure-Arousal-Dominance (PAD) scales (Mehrabian and Russell 1974). Assuming that zipping and zapping are very similar, the authors created a model in which ad content, measured in terms of appeals and uniqueness, triggered emotional responses measured in pleasure and arousal dimensions. Subsequently, emotional responses influenced attitudinal components (hedonic, utilitarian and interestingness) and viewing time which was controlled by the subjects of the study via a remote control. Olney and colleagues (1991) found that pleasure had a strong positive effect on the three attitudinal measures and viewing time. Meanwhile, arousal significantly influenced positively the evaluation of how interesting the content was evaluated and viewing time.

All the research described in this section studies control as the possibility to avoid or be exposed to advertising messages. VCRs and RCDs allow for a basic level of control within which users can zip or zap messages. However, it is not as flexible as the control

options created by new media like the WWW. As was clearly stated in the prior definitions of interactivity, the environment, the flow of information and content, and the order of this content might be controlled by the user.

The importance of previous work on new technologies of the 1980s and early 1990s notwithstanding, the previously reviewed research does not address the content of the ad as a source of the emotions perceived (e.g., Holbrook and Batra 1987, Stout and Rust 1993, Olney et al.1991). The concern of this dissertation is in the emotions generated by the perceptions of control over the interactive message; not on emotions as triggers of the use of control such as is present in the exploration of the use of VCRs and remote control devices. In other words, this dissertation changes the direction of the effect from emotions elicited by the content that affect the use of a remote control to how control elicits or influences emotions in interactive media. Even though the directional switch of the current research (emotions>control to control>emotions) is driven by technological changes in media, it is important to state that research on traditional media is important and applicable to new media and should not be disregarded.

The next section explains control in interactive media as the first step to understand how control of the medium can be conceptualized as an elicitor of emotions.

Control in interactive media

> "The VCR, then, is not a revolution, but an evolving technology that enables people to be more active in their communication experiences" (Rubin and Bantz 1987 p. 472).

Fifteen years after the publication of this paper, it would be feasible to use a similar phrase to explain the effect of the Internet as a cluster of mass media. Stripping

away the Internet's hype and hope, a sense of differentiation still prevails between traditional media and new media, based on the variable of control. Granted, consumers always had the opportunity to approach or avoid a salesman or ask for a catalog via mail. What is new are: "the speed, scope, and scale of interactivity that is provided by new information and communication technologies" (Pavlou and Stewart 2000).

In research about the Internet, there is a growing concern about offering control of the site or advertisement. However, the definitions of control and the focus on antecedents and consequences vary across a wide range of marketing literature.

Presenting an exclusively theoretical perspective, Roehm and Haugtvedt (1999) differentiate between control of the consumer and the marketer in interactive media, and the control that influences the form or content of the advertising. For example, customer controlled forms implies that the consumer can select the layout or type of delivery of the ad. Customer controlled content means that the user is able to modify the display of a product's attributes.

Similar to the customer-controlled/content-oriented dimension of Roehm and Haugtvedt definition of interactivity, Ariely (1998, 2000) defined control in an interactive system as control of the flow of information, in which the user can manipulate what information will be presented, for how long, and what information will be next.

The relevance of the careful study of control was tremendously enhanced by Ariely's findings, which described control's cognitive costs and benefits. Control improves performance of cognitive tasks and learning because the fit between actions and outcomes is improved, anticipatory schemas are enhanced, and the consumer's ability to explore and understand the information structure increased.

The most important benefit of control of the information, flow according to Ariely, is the dynamic heterogeneity of consumers. Dynamic heterogeneity refers to how consumers' mental models change as they create and refine their hypotheses about a product while obtaining increasing levels of information.

The benefits of interactive systems are strong, but there is also one very serious cost. Considering that consumers have limited amounts of cognitive capacity, users have to shift part of their cognitive capabilities from understanding the data to the management of the information flow.

Besides the cost of cognitive investment in a secondary task (i.e., information flow), Eveland and Dunwoody (2001) propose that disorientation may be also a major problem of control in interactive systems. This lack of orientation can trigger a stronger investment of cognitive resources in the secondary task of controlling the information. In other words, users that feel lost on a site might need to invest all their cognitive abilities to navigate the site instead of analyzing the information contained in the site.

From a more affective perspective, Aylesworth, et al. (2000) explored the positive effects of control in satisfaction and credibility of information mediated by consumers' knowledge of the product category. In this study, control was divided in two categories: decisional and behavioral. Decisional control is defined as the ability of a person to choose from a number of options while behavioral control concerns a person's capability to effectively change the environment through his or her actions (Averill 1973).

In Aylesworth et al.'s (2000) work, decisional control was operationalized by providing hyperlinks in the Web pages. Subjects could click on certain links to select information about specific models of the product they desired to see. Behavioral control

was operationalized by letting consumers seek information on customized configurations of notebook computers. Subjects could select attributes like type of display and size of hard drive by clicking on buttons.

The findings of this study indicate that subjects who were knowledgeable about the domain in which they were seeking information (product category) perceived a company that afforded more control to be more credible than a company that allowed them less control. Opposite effects were seen for subjects who were less knowledgeable about the domain.

Unfortunately, the question about satisfaction and control had a less clear answer. Knowledgeable subjects indicated a higher level of satisfaction when they had more control over accessing information than when they had less control. Meanwhile, less knowledgeable subjects did not show significant differences of satisfaction between the two levels of control.

Bezjian-Avery et al. (1998) performed another type of research that explored the impact of personal differences and control issues in an interactive ad. In this study, the visual or verbal orientation of a person was assessed as a moderator between interactivity and its effects on purchase intention and time spent viewing advertisements.

In their comparison between traditional and interactive advertising, defined as linear format and passive vs. active navigation of information respectively, the authors found that visually-oriented subjects who clicked through interactive ads showed lower levels of purchase intention. Meanwhile, verbally inclined users who interacted with the ads showed a significant increase in purchase intention when exposed to interactive ads.

More interestingly, and even perplexingly, Bezjian-Avery and her colleagues found that subjects in their study did not spend more time on the interactive advertisements compared to the non-interactive ads. In fact, visually-oriented users actually spent less time with the interactive ads. These results led the authors to conclude that positive attitudes and interactivity do not mix well. In a manner still not understood, the active involvement of a user clicking on the ad undermines the ad's persuasiveness. The authors suggested that the less interactive ad was more persuasive than the more interactive ad since a more interactive ad might require more cognitive investment from the consumer that might make the ad less appealing.

Notwithstanding Bezjian-Avery et al.'s results, other researchers who have studied control as one variable in a set of constructs to globally explain interactivity have found a positive relationship between effectiveness measures like persuasiveness or attitudes and interactivity (Macias 2001, Novak et al. 2000, Wu 2000).

Locus of control, a frequently cited individual difference in the psychology literature, can be linked to control of the Internet (Hoffman, Novak, and Schlosser 2000, Sohn and Leckenby 2001). This frequently studied individual difference taps into a person's expectancies about his actions and their effects on the environment (Lefcourt 1992).

The most common type of analysis of the locus of control construct is to divide subjects in two categories conceptualized as two opposites in a one-dimensional range. One of the categories is internal locus of control. This category is formed by subjects who believe they control the environment, and that their actions are highly linked to the outcomes. The other group is the external locus of control, which clusters individuals

who feel that the environment, (e.g., chance, luck, circumstances) or others are the responsible agents of all outcomes.

Not surprisingly, researchers (Hoffman, et al. 2000, Sohn and Leckenby 2001) who linked locus of control to the use of the Internet found that internals (people with high levels of internal locus of control), as compared to externals, have used the Web for a greater number of years, are more satisfied with their Internet skills, use the Web for more goal-oriented activities, do not substitute social activities for the Web, perceive higher levels of interactivity on the Internet, and are less worried about online security.

Despite these valuable studies, it seems that the exploration of emotions in interactive media, particularly concerning the issue of control, is just beginning to flourish as an area of study. Researchers like Aylesworth et al. (2000) have studied satisfaction, and Ariely (2000) has indicated the need to study the affective benefits of control, but the research conducted in emotion and interactive advertising so far is close to zero.

The next section will present how emotion and its related concepts, affect and attitudes, have been studied in marketing and advertising research in order to construct the model of how emotions are created in interactive advertising.

Emotions in Marketing and Advertising

The study of emotions is not a recent area of interest. Philosophers from Aristotle to contemporary researchers have explored what is an emotion, the appropriate research methods and what are their effects on other human processes like cognition (Frijda, Manstead and Bem 2000).

The richness of the body of knowledge on emotions does not mean that there is a consensus on the definition, research measures and effects of emotion. There are four major theoretical traditions (Cornelious 1996) that have developed a large number of definitions of emotion (Kleinginna and Kleinginna 1981). Similarly, researchers who work under a particular theoretical framework are inclined to use particular methods and measurements. For example, some researchers have accepted physiological measures as evidence of an emotional experience (i.e., Borod 2000) while others apply self-reported measures of emotions (i.e., Mehrabian and Russell 1974). As expected, the research of emotions in marketing and advertising applications is amply influenced by this lack of theoretical consensus.

Even though efforts to understand emotions on advertising and marketing have been strong for at least the last 20 years (Holbrook and Batra 1987, Richins 1997), there has been a misuse and mismatch of the differentiation of affective states, their definitions and subsequent operationalizations (Bagozzi, et al. 1999).

The difficulty in finding the boundaries between affect, emotions, moods and attitudes is complex considering there is little consensus in definitions. One of the most important distinctions is between affect and emotion. These concepts can be regarded as two separate entities (Holbrook and O'Shaugnessy 1984), as synonyms (Zajonc 1980), or affect can be considered as a term that covers emotions, moods and attitudes (Bagozzi et al. 1999). The last framework is the one adopted in this dissertation, due to its clarity to accommodate specific definitions and operationalizations to be used to explore the study's research questions.

Affect, according to Bagozzi and his colleagues, represents a consumer's general processing of feelings, while emotions, moods and attitudes are more specific feeling processes. There are important differences between emotions, moods and attitudes that can be clearly identified.

Researchers mention the length of the duration of the affective state, intensity, source, and link to action tendencies as common differences between emotion and mood (Bagozzi et al. 1999, Cohen and Areni 1991, Erevelles 1998). Emotions are differentiated, then, by being feelings that last for a shorter period of time, are more intense, are generated by a specific stimulus, and have a more direct link to behavior tendencies than do moods.

Attitudes and emotions are also different from each other. Bagozzi (1992) proposes that attitudes do not need arousal as a trigger, while emotions do need this excitatory state in order to be elicited. In addition, attitudes can be stored in memory for later retrieval. Emotions do not get stored in memory, as they cannot be deposited in memory with all the experiential elements; they can only be stored as a memory with no experiential feelings. Finally, emotions have a more direct and strong link to behavior than attitudes. In summary, emotions are intensely arousing, but short-term, feeling processes that create a drive to change current behaviors. Moreover, they are activated by a specific source.

Even though confusion and misuse of affective terms in the consumer behavior literature are important caveats to consider, there are a large number of results in the study of emotional response to advertising that are reliable and useful. A venerable stream of research has studied the effects of emotion in advertising processing. For

example, researchers like Edell and Burke (1987) viewed emotional experiences elicited by advertisements as three dimensions: upbeat, negative, and warm feelings. Similarly, Holbrook and Batra (1987) synthesized a large number of emotional responses to advertising in three dimensions (i.e., pleasure, arousal, and dominance). These three dimensions are very similar to Mehrabian and Russell's (1974) PAD measure of emotion.

Other researchers have studied emotions in the areas of general consumption experiences (Richins 1997), or more specifically retail spaces (Babin and Darden 1995, Bellizzi and Hite 1992, Yoo, Park and MacInnis 1998) or service encounters (Chebat, Filiatrault, Gélinas-Chebat and Vaninsky 1995).

In general, the research of emotions on consumer behavior has led to practices that cluster emotions in dimensions like PAD or negative and positive, and the exploration of the effects of emotions or moods in attitudes (Olney et al.1991, Villegas and Stout 2002), purchase intentions (Gardner 1985), behaviors like time spent with the stimulus (Holbrook and Gardner 1998, Milliman 1982, Olney et al. 1991), motivation to process information (Petty, Schuman, Richman, and Strathman 1993) and other influences. The following sections will present three of the most important elements in the study of emotions within an advertising context. These constructs are involvement, attitude, and behavior.

Involvement

Involvement is an important, albeit controversial, construct in consumer behavior and advertising research (Andrews, Durvasula, and Akhter 1990). Moreover, this variable is a relevant element in understanding the influence of affect in information processing (Petty, Cacioppo and Kasmer 1988).

The relevance of this variable is difficult to overstate, since the main models of information processing, such as the ELM (Petty and Caccioppo 1981), identify involvement as the most important element in forecasting the motivation to process information. However, the relevance of involvement can be obscured by the many definitions and operationalizations of this variable (Day, Stafford, and Camacho 1995).

A useful method to differentiate involvement definitions comes from Johnson and Eagly (1989). The authors view involvement in terms of three distinct types. People can be involved in a situation or message because of their enduring values (value-relevant involvement), their ability to attain desirable outcomes (outcome-relevant involvement), or by the impression they make on others (impression-relevant involvement).

The importance of the distinction between these types of involvement in the study of persuasion is large. Johnson and Eagly, in a meta-analysis of the persuasion literature, found that the outcomes of argument processing have major discrepancies when involvement is manipulated. For example, subjects in high value-relevant involvement conditions are harder to persuade than subjects in low involvement situations. In contrast, for subjects in high outcome-relevant involvement situations, persuasion was higher than for people in low involvement conditions, particularly if the message contained strong arguments.

Possibly the two most common types of involvement in advertising studies are the first two presented by Johnson and Eagly. Referred to by authors like Andrews et al. (1990) and Day et al. (1995), enduring involvement (similar to value-relevant involvement) and situational involvement (similar to outcome-relevant involvement) have been used in studies that have explored the effects on motivation to process ads.

Since there are many definitions for involvement and explanation of its effect it is vital to determine in a very exact manner which type of involvement will be used in a study. Following Petty, Cacioppo and colleagues' work on the Elaboration Likelihood Model (ELM), it seems that situational involvement is the most theoretically sound definition of involvement. For advertising research, involvement in the situation is defined as:

> "issues, situations, or messages can have significant consequence on, or be personally relevant to, one's own life" (Andrews et al. 1990 p. 31).

It is important to clarify that there is also a body of literature on affective involvement. For example, Petrovu and Lord (1994) investigated the effects of affective and cognitive product involvement in comparative advertising. In their work Petrovu and Lord defined affective product involvement as a product's ability to elicit in consumers value-expressive or affective motives. However, in this research involvement is conceptualized as situational motivation since this is the definition used in the ELM, the basis for the hypothesis that will be presented in the next chapter. In the future research section possible implication of using other definitions of involvement are presented.

The influence of affect in the formation of attitudes has been studied extensively under the framework of the ELM as it is reflected in the major reviews of the topic (Petty, et al. (1988), Petty, Wegener, and Fabrigar (1997), Wegener and Petty (1996)). In their review of mood and its effect on information processing, Wegener and Petty (1996) divided the effects of affect in low, moderate or high involvement situations. Subjects who were in low involvement situations used moods as a persuasive cue that

helped in the development of an attitude. For example, Petty et al. (1993) found that mood has a significant effect on attitude toward an object but no effect on thoughts.

When involvement to process message information is not relatively low or high, the effects of mood is evident in the amount of processing itself. Some studies (e.g., Mackie and Worth 1991) have found that positive moods lead to less message processing than do sad or neutral moods.

In the case of subjects having high levels of involvement, the influence of affect on persuasion is more complicated, since it can take place in two forms. First, affect can be regarded by the subject in the high involvement situation as information if the affect is relevant to the attitude formation. For example, happy thoughts about a person in a high involvement situation are used as another strong argument to create a positive attitude toward the person.

An empirical test of this idea was presented by Petty et al. (1993). The researchers found that people in high involvement conditions significantly expressed feelings as part of their thoughts listed, while the link between mood and attitude was statistically insignificant.

Second, besides affect as an argument, moods can tinge the information retrieval from memory that is used to evaluate the attitude toward an object. For instance, a bad mood can motivate a person to evaluate an object in a more negative manner than a positive mood. The tendency to evaluate objects in the same valence of the affective state is more prevalent when information is ambiguous and there are no other factors that can bias the attitude construction.

As it was stated before, some of the articles on the affect literature are less than precise in their use of affect-related terms. This problem is more than a semantic issue since a lack of precision of term use can provoke some misunderstandings. For example, the problem of the differentiation between mood and emotion is patent in Wegener and Petty (1996). The authors use the word mood, but they mention an example like the one presented above, where happy feelings elicited by a person are considered a mood. According to the differences between emotion and mood in this research, if the feeling has a source then, most likely, it is an emotion. Therefore, it is safe to say that we can link emotional responses to attitudinal change.

Attitudes

As evidenced in the last section, attitude, and particularly attitude formation, play a vital role in the understanding of persuasive processes. Eagly and Chaiken (1993) define attitude as:

> "a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor." (p. 1).

From this definition, it can be concluded that an attitude can change more easily than a personality trait. Due to the use of the term "tendency" by Eagly and Chaiken, rather than behavioral disposition (e.g., Beller 1949), attitude is viewed as a term that can be changed, although some attitudes can be quite resilient to change.

Since attitude is a psychological tendency that can be changed and one that plays a major role as a mediator of advertising effectiveness (Holbrook and Batra 1987), it is not surprising that advertisers have developed different measures of the attitudinal tendencies toward particular advertisements (Mackenzie, Lutz and Belch 1986) or full

Web sites (Chen and Wells 1999). Reviewing the different attitude toward the ad (A_{Ad}) and toward the Website (A_{St}) definitions, there is a consensus that attitude is a tendency to respond favorably or unfavorably to a commercial stimulus.

The effect of emotions on attitudes toward the ad has been studied thoroughly by Holbrook, Batra and colleagues (e.g., Batra and Ray 1986, Holbrook and Batra 1987, Olney, et al. 1991). In general, the models presented by these researchers posit emotion (using a dimensional approach) as a moderator between advertising content and A_{Ad}. Similar results have been found using the A_{St} measure (Villegas and Stout 2002).

Some researchers have warned that the effect of emotions on attitudes are moderated by other variables. For example, Miniard, Bhatla and Rose (1990) suggest that feelings are more important than thoughts in the formation of A_{Ad} in low involvement situations, while under high involvement conditions, subjects used cognition and affect provoked by the ad equally.

Behavior

The study of emotions and attitudes elicits among practitioners and researchers in advertising an important question that has to be answered. That question is: What are the behavioral implications of involvement, attitudes and emotions? This relevant question has been answered by some researchers using behavior or behavioral intent as the outcome of emotions and attitudes (Bagozzi et al.1999).

The zenith of behavioral measures for advertising effectiveness is a purchase response, measured as a brand choice or purchase decision (Holbrook and Batra 1987). The effects of emotions have been documented thoroughly, for example Aaker, Stayman

and Hagerty (1986) found that even a mild emotion such as warmth generated by ads positively affects A_{Ad} and purchase likelihood.

Another piece of evidence of the influence of emotions on behavior comes from the measure of time spent using a stimulus. In a study reported by Holbrook and Gardner (1998) subjects varied listening time to music selections according to the authors' hypotheses about arousal and pleasure. Holbrook and Gardner's findings indicated that the time the subjects spent listening to music was positively linked to pleasure and was associated in an inverted-U form with arousal.

A similar use of time as the behavioral measure of emotions and attitudes as moderators of viewing time was used by Olney et al.(1991). In the authors' full model, attitudes derived from interest and hedonic values and the emotional dimension of pleasure had a positive and significant effect on viewing time of ads.

Bagozzi and Moore (1994) present an alternative to time and purchase intent as behavioral measures in advertising research. In their research, the authors found that in a PSA context negative emotions, namely anger, sadness, fear, and tension, triggered feelings of empathy. These feelings led to a decision to help children abused by their parents.

Are Emotions Different for Interactive Advertising?

One of the major assumptions of this research is that emotions elicited during the interaction between humans and an interactive medium are different than the emotions felt by passive TV-watching or in a real consumption experience. This section presents a review of research findings that support this basic assumption.

Researchers like Edell and Burke (1987) and Holbrook and Batra (1987) have created measures of emotion for advertising stimuli. Similarly, Richins (1997) developed the Consumption Emotion Set to measure consumption experiences beyond vicarious participation. Richins posits that the use of emotional responses to advertising scales in consumption contexts is limiting. She argues that the vicarious nature of responses to advertising is different than, for example, buying a pair of shoes. One of the major differences between vicarious and active consumption is intensity of affective responses. Generally, advertising elicits emotions that have a low intensity. Another difference is the range of emotions expressed. According to Richins, real consumption has a more limited repertoire of emotions than does advertising, which can manipulate many responses.

Another good point expressed by Richins is the importance of context. Many researchers agree that the context in which the emotion is elicited is a very important determinant of the emotion felt. It seems from these researchers' findings that responses to different marketing stimuli should be measured with scales that take into consideration the nature of the stimulus and context.

One reason to assume that affective experiences are different in an interactive medium originates from an intrinsic trait of the Internet. Interactivity is the attribute that makes the medium unique (Cho 1999). Further, interactivity and other characteristics of new communication technologies offer a qualitatively different experience than other media. On the WWW for example, people can feel that they are in a different place, called telepresence by Edwards (1998) or forget their surroundings and time frame because of a feeling of flow (Novak, et al. 2000). Incidentally, this positive mental state where arousal and challenge are at optimal levels cannot be reached while watching TV

since this medium does not present any real challenge to the viewer (Csikszentmihalyi 1997).

More to the point, Grodal (2000) hypothesized that emotions are different with a passive medium like TV and an active medium like a videogame because these media demand dissimilar levels of engagement. These varied levels of engagement lead to different appraisals of the situation and the creation of emotions. For example, a passive sense of fear will invade the mind of a person as soon as a character is attacked by a zombie in a TV movie. However, the feelings will be completely different if the person has control of the character. Appraisal of the situation might create two very different emotions, depending on the person's skill. One possible emotional reaction could be despair, since the novice who controls the character knows that he is not prepared to kill the enemy. An expert, on the other hand, would feel arousal because he is able to effectively fight the monster. Therefore, Grodal argued, more active media are closer to real-life emotional appraisal processing than are traditional one-way media like TV.

Grodal's arguments can be integrated in the advertising literature not only because videogames could be used as a medium but also because Grodal's ideas can be applied on other interactive media. For example, novices of a new computer interface (interpreted as Web sites, PDA screens, new types of interactive advertising, etc.) might have different emotions than experts while interacting with the interface.

Also, the computer as the medium between message and receiver could be a trigger of different emotions. A large stream of research (Marakas, Johnson and Palmer 2000, Moon 2000, Moon and Naas 1998, Reeves and Naas 1996) shows that computer users tend to act and feel towards this technology as if they were engaged in a full human

social interaction. For example, Moon (2000) found that the principles of exchange of information between humans (i.e., tit for tat) based on affective judgments also apply to relationships between computers and users. In summary, the difference between people in control of a medium or watchers of a straightforward narrative is of major importance for the development of an understanding of emotion elicitation in new media.

It makes sense to study emotion in advertising, with the exception of fear inducing advertisements like PSAs, in terms of global dimensions like positive or negative responses. From the publication of Krugman's (1965) work, the levels of involvement of the audience consuming advertising are assumed and usually found as low, so more specific emotions are hard to find (Bagozzi et al. 1999).

However, the research presented in this section indicates that interactive messages can be more engaging and may lead to different emotions. One possible way to answer the riddle of why emotions can be different in this type of environment can be obtained from some of the dimensions of appraisal theories.

Non-traditional media like the WWW are differentiated from traditional media by their capacity to offer control to the user. This attribute might have a strong effect on the elicitation of emotions considering the study of these type of feelings through a cognitive approach to emotion (Arnold 1960, Lazarus 1982, Roseman 1984). More specifically, this study will use appraisal theory to create arguments in favor of interactive media as generator of distinct emotions.

The major difference of appraisal theory and other models of emotion is the belief in appraisal theory that discrete emotions are elicited by a set of appraisals, or judgments, one of which is the sense of control of the situation or environment (Ellsworth 1994).

Appraisal Theories

The appraisal of a situation as the trigger of emotions is the main tenet of the cognitive tradition. However, there are other important perspectives that define emotions, and their antecedents in other manners. Cornelius (1996) identifies, besides the cognitive, the Darwinian, Jamesian and social constructivist perspectives. These four perspectives are quite diverse in their explanations of what an emotion is and what roles emotion plays.

The Darwinian perspective is based on the assumption that emotions are universal since these feelings serve as mechanisms that help the adaptation to environmental changes. For example, terror is a universal emotion that helps an organism to avoid injury (Plutchik 1980). Similar to the Darwinian tradition, Jamesian researchers study physical reactions to emotions. More specifically, the focus is on emotions as a product of bodily responses. James (1884) believed that in order to have an emotion an individual has to experience bodily changes that elicit the emotion.

A more recent theory, social constructivism, is not especially interested in the physiology of emotions since it is based on a different role of emotions compared to the Darwinian perspective. Social constructivists view emotions as constructions created by clusters of individual that serve interpersonal purposes. For instance, a social constructivist might agree with the Darwinian perspective that fear can be elicited to avoid injury. However, in everyday life, Scruton (1986) says, fear serves as a mechanism to aware people of the dangers of not fulfilling the expectations of a social group (i.e., a child is taught to fear academic failure as much as he fears ferocious animals).

Finally, cognitive researchers focus on the perception of the nature of an event. The two main assumptions of appraisal theories are (1) emotions supply motivation and information to adapt to the environment; (2) the particular emotions are elicited by perceived characteristics of the emotion-eliciting circumstance and their interaction with an individual's expectations, interests or desires. The understanding of the second assumption is the main drive of appraisal theories (Smith and Kirby 2001).

According to Frijda's (1986) example, sugar in my coffee does not create an emotion just because of its pleasant or unpleasant flavor. It is the fact that my wife poured two tablespoons of sugar in my coffee, since I am sure that she knows that I drink my coffee with no sugar that I feel a negative emotion. Another, more specific example, is that of a person who receives a letter from the IRS, summoning strong emotion by warning him that he did not file his taxes on time. The IRS-challenged person angrily calls his accountant, but before the accountant can take the call, the person in question sees all the filing paperwork on his desk. It is not anger that the individual feels; it is now regret.

A misunderstood argument of appraisal theory is the belief that in many cases, emotions are elicited in a very fast manner. Hence, it is argued, an emotion cannot be the outcome of an appraisal, or cognition since any organism needs a certain amount of time to process information. Scherer (1993) compares this discussion to Zajonc (1980) and Lazarus (1982) lively debate on the role of cognition on emotion. The difference between the two positions would be erased by simply having a common definition of cognition. Scherer (1993) affirmed that appraisals are not necessarily complex conscious cognition.

Even more, Scherer mentions mounting evidence from neuroscience that supports the belief that appraisals can be subconscious and extremely fast cognitions.

The four major perspectives of emotions explain in their own way the complex and dynamic nature of this topic. As in many areas of research, a full understanding of emotions cannot be achieved applying exclusively one approach. However, the focus on one particular perspective is necessary to step forward the understanding of emotions. In this dissertation the appraisal approach was applied since it can bridge the interest on interactive media and emotions through the concept of control.

Dimensions of appraisal

Appraisal theorists Smith and Ellsworth (1985), Scherer (1984), Frijda (1986) Ortony, Clore and Collins (1988), and Roseman(1984) have proposed a certain number of appraisal dimensions (a range between 2 to 10 dimensions) to explain the discrete emotions felt by people. Even though there are many appraisal dimensions, and variations of similar concepts, Ellsworth (1994) proposes that in essence, the majority of these researchers agree on the most important dimensions. The following paragraphs will briefly explain some of the most common appraisal elements.

Pleasantness. One of the most important dimensions intrinsic in the definition of emotion is valence. Any stimulus can elicit pleasure or pain in an individual. However, the mechanism of appraisal is different, according to several theories. Smith and Ellsworth (1985) and Frijda (1986) among others, warn that there is no consensus if the pleasantness appraisal of objects and people are intrinsic or based on the context. For example, Roseman (1984) views pleasantness as the outcome of an appraisal of motivation congruence or incongruence, while Scherer (1984) believes that pleasantness

is an intrinsic trait of stimuli. For example, there is evidence that exposure to some animals or the sight of corpses have a "wired" response of fear.

Control. This is a major element of appraisals concerned with individuals' beliefs of themselves as weak or strong in a situation (Roseman, Antoniou, and Jose 1996). If a situation is controllable through the actions of a person or if the event allows for an adequate coping strategy, then control should be high (Lazarus and Smith 1988, Scherer 1984).

A concept related to control in appraisal theory is coping. Scherer (1984) distinguishes emotions with an evaluation of coping potential that includes an assessment of individuals' ability to control the event or its consequences, the power to change this event or outcome, and the competence to cope with the event's aftermath.

Agency. Another relevant attribution dimension is agency or, in other words, who is responsible for the event (another person, self or circumstance). Anger, shame, guilt and sorrow are particularly affected by the evaluation of causality (Ellsworth 1994). For example, an illness can be attributed, depending on the belief system of an individual, to be caused by the environment, another person, or the self. These different agency appraisals create discrete emotions, frustration, anger or regret, respectively according to Roseman, Spindel and Jose's (1990) emotion system.

Scherer (1984) expands this attribution mechanism by considering other elements in addition to the source of causality. Besides agency, the legitimacy of the action of the responsible party is another element of the attribution of causation.

Certainty. Roseman (1984), Smith and Ellsworth (1985), and Fridja (1986) agree that the assessment of the likelihood of an event is a major factor of the determination of

emotions. For example, in Smith and Ellsworth's research (1985), anger has a stronger certainty dimension than fear or surprise, which are characterized by a feeling close to "not knowing what will happen in the future."

Even though this is not an exhaustive list of the appraisal dimensions found in this prolific area of study, it features definitively some of the most relevant constructs for judgments of events (Ellsworth 1994). The relative importance of all these dimensions in the creation of affect notwithstanding, two that are particularly interesting for this study are control and agency.

Control and agency are important appraisal dimensions because, as has been already stated, differences between traditional and interactive media seem to be driven mainly by control. Also, there is research that shows how agency is affected by the feelings of satisfaction of the interaction between a user of a self-service technology (Meuter, Ostrom, Roundtree, and Bitner 2000) and the outcome of the interaction between users and computers (Moon and Naas 1998).

Feelings of control and agency in new media can be equated to the appraisals used in interpersonal relationships or real life events based on research of the interaction between people and media like computers (i.e., Reeves and Naas 1996). This research stream shows, among other issues, how users interact with computer interfaces as if they were real people. For example, Moon (2000) found that users disclosed more personal information to a computer that gave a thorough description of its attributes than a computer that was not as informative. In other words, subjects in this study used a personal relationship rule in their interaction with a computer.

The importance of control and agency

Two dimensions that are present, besides pleasantness and certainty, in many of appraisal theorists' work are control and agency (Ellsworth 1994). Although not as strong as pleasantness as an explicator of variance of emotional response, researchers have consistently found that the appraisal dimensions of control and agency are major elements required in differentiating certain emotions, particular negatively valenced affect (Smith and Ellsworth 1985).

Interestingly, both dimensions of appraisal are in some manner interconnected. Although some researchers have separated agency and control in two dimensions (Roseman et al. 1990), and both are considered to be orthogonal (Smith and Ellsworth 1985), it seems that in some contexts they are closely related.

Smith and Ellsworth propose a persuasive explanation for the close relationship between control and agency. From their results, the authors conclude that people first analyze whether or not they are in control of the situation and, if that is so, they will usually attribute the agency dimension to themselves. If the individuals feel that they are not in control, they will try to attribute the causality of the event to others, or to external circumstances.

In the area of interaction between humans and computers, Moon and Naas (1998) also found a correlation between agency and control. The subjects in their study attributed higher levels of responsibility of the outcome of the interaction to themselves when they had more control over the system. Similarly, studies of the interaction of people and technology show that people tend to blame the technology for the majority of failures (Meuter, et al. 2000).

Roseman's emotion system

As Ellsworth (1994) and Scherer (1993) mentioned in their reviews of the most influential appraisal theories, all of these theories share certain common dimensions but the specific definitions of the appraisals and the emotions that result from the combination of these constructs vary greatly among researchers.

Since the scope of this study is the effects of control and agency in the creation of emotions and not a review and test of diverse appraisal theories, it is necessary to select a particular stream of research.

One of the most frequently empirically-tested and dynamic appraisal theories has been developed by Roseman and colleagues (Please refer to Roseman (2001) for a thorough review of the theory). Roseman's emotion system is parsimonious because of its low number of dimensions (6) and very specific combination of dimensions that create discrete emotions (17). Also, the usefulness of predicting the elicitation of discrete emotions has been tested, and has been compared successfully to other appraisal models (Roseman et al. 1996).

From this section forward the dissertation will focus on Roseman and colleague's emotion system for the reasons mentioned above. This system's inclusion of unique emotions and measurements could be seen as disadvantages by some researchers, but its strong and clear empirical findings and lucid methodology make this emotion system an adequate framework to study the effects of appraisals on emotions and the effects of the latter on attitudes and behavioral intention. However, the distinctiveness of the system requires the careful and faithful application of the methods and measures described by the authors.

Roseman and colleagues' work share many similar dimensions to other theories, but for clarity, a full list of their dimensions in the latest version of their theory is presented.

Situational state. This dimension measures whether an event is perceived as consistent or inconsistent with a person's motives. Consistency with motives brings positive emotions, while inconsistency leads to negative emotions.

Probability. The perceived likelihood of an event is measured through this dimension. For example, an uncertain outcome triggers hope, while a certain result leads to joy.

Agency. Responsibility of an outcome is the main tenet of agency. Feelings of guilt, anger or sadness can be attributed to judgments of who is responsible for a negative outcome. In the particular order presented above, self, other or circumstance would have caused the emotions.

Control. In the latest revision of their model, Roseman and colleagues (1996) warn that control should be constructed as *relational* control. That is, power of the self to change the environment or coping potential are not adequate measures of control. The appraisal of control that is empirically sound is a relational control appraisal where an individual compares his control abilities to the controllability of the stimulus.

Motivational state. An important trait of emotions is their capacity to motivate people into action. In general, motivations can be appetitive, to obtain a reward, or aversive, to avoid punishment.

Characterological. This recently added dimension is used to separate frustration from disgust, anger from contempt, and guilt from shame. This appraisal evaluates

whether the negative outcome is characteristic (intrinsic) of the person, object or self or whether is just a temporal characteristic.

Appraisal theories like Roseman's posit that an event that is judged on dimensions like the ones presented above will create specific, discrete, emotions. Table 1 presents the emotions elicited by the combinations of these six dimensions.

Probably the best way to explain this table is through an example. Let's suppose that a person has a car accident (nothing serious, just a fender-bender). This event can be appraised as motive-inconsistent (almost nobody wants to destroy their own property), certain (the fender-bender just happened), aversive (avoid an unplanned cost), and non-characterological (the drivers involved in the fender bender were not familiar with each other), the driver thinks that he is the culprit of the accident, and he also believes that he was in control of the situation the whole time, then the emotion felt, according to the table, should be guilt. Further, if the driver thinks that the accident was caused by the other person then the emotion felt should be anger.

Table 1

Hypothesized Structure of the Emotion System

Roseman et al. (1996)

		Positive Emotions Motive-Consistent		Negative Emotions Motive-Inconsistent		
		Appetitive	Aversive	Appetitive	Aversive	
Circumstance	Unexpected	Surprise				
Caused	Uncertain	Hope		Fear		Low control
	Certain	Joy	Relief	Sadness	Distress	Potential
	Uncertain	Hope		Frustration	Disgust	High control
	Certain	Joy	Relief			Potential
Other-Caused	Uncertain	Liking		Dislike		Low control
	Certain					Potential
	Uncertain			Anger	Contempt	High control
	Certain					Potential
Self-Caused	Uncertain	Pride		Regret		Low control
	Certain					Potential
	Uncertain			Guilt	Shame	High control
	Certain					Potential
				Non-Characterological	Characterological	

Discrete Emotions

One of the traits of a majority of appraisal theories is the belief that the appraisal of an event elicits discrete emotions. The combination of judgments about a situation leads to a discrete emotion, instead of a syndrome of emotions or less descriptive dimensions based exclusively in valence.

Table 1 describes Roseman's system of emotion, but there are other theorists like Smith and Ellsworth (1985) and Scherer (1988) who present similar ways that link discrete emotions with particular combinations of appraisal dimensions. However, it is necessary to note that other researchers, like Frijda (1993) and Scherer (1993), view the discrete approach as a reductionistic manner to study the complex emotions triggered in everyday life.

Some of the most important appraisal theories advocate for "discrete, innate, universal emotions" (Ellsworth 1994 p. 28). Unfortunately, much of the work in consumer behavior and psychology of persuasion has focused on the clustering of emotions by using their valence (DeSteno et al. 2000, Ragunathan 2000, Ragunathan and Pham 1999). Instead of trying to focus on a panoply of emotions or dimensions, this study focuses on a limited number of emotions, which are negative.

This interest in negative emotions is generated by the increasingly ambivalent relationship of technology and its users (Mick and Fournier 1998), as well as by the current practices of many Internet companies to create more restricted environments for the users (i.e., Yahoo's new email policies that disallow the downloading of emails to software like Eudora or Outlook) and the charging of previously free services (Wingfield 2002). Finally, in the interaction between users and self-service technologies that results in a negative outcome, the blame, or causality, is shifted to the interface instead of the user (Meuter, et al. 2000).

Another argument in favor of the focus on negative emotions is Smith and Ellsworth's (1985) finding of the relevance of control in explaining unpleasant emotions as compared to positive feelings. Also, negative emotions, viewed as sources of

information for an organism, have a stronger disruption capacity and behavioral drive for change than positive emotions (Oatley and Johnson-Laird 1987). Finally, from a more practical perspective for advertising research, negative emotions play an important role in the effectiveness of ads (Zeitlin and Westwood 1986), and can be powerful elicitors of behavioral response (Bagozzi and Moore 1994).

As it was previously stated, the number of emotions and the dimensions that elicit these emotions are relatively large (Roseman 2001). Therefore, this dissertation will focus in two dimensions of interest and the different discrete emotions created by the combination of these judgments of an event.

Selection of specific discrete emotions

Since this study is interested in the negative emotions elicited during the interaction between an interactive message and a user, the first delimitation is, obviously, the evaluation of valence of the event. In Roseman et al.'s (1990) model, the valence dimension corresponds to motivation consistency (an event is wanted by the person) for positive pleasure and motive inconsistency for negative pleasure. For example, since this research is about negative emotions it is needed to create an event that should be viewed by the subjects participating in the study as motive inconsistent; that is the outcome of the event should be regarded as something that was not the wanted result.

Another delimitation of this dissertation is agency appraisal. Researchers believe that agency can be attributed to one of three entities: self, others and circumstance (Smith and Ellsworth 1985, Roseman et al. 1990). For this study, the emotions linked to circumstance will not be explored because as was stated earlier, the focus is on the interaction between users and messages (Cho 1999). It is assumed that circumstance does

not play a prominent role in the interaction between advertisements and audiences. Future research could address emotions like sadness that are differentiated from other negative emotions through the attribution of agency to circumstances beyond one's control (e.g., Bodenhausen, Sheppard and Kramer 1994, Levine 1996).

Another important clarification in the use of appraisals for this study is the restriction of the characterological dimension. For the proposed experiment the appraisal of the event was controlled in a manner that it was judged by the subjects of the studies as non-characteristic of the stimulus or the subject in order to elicit higher feelings of guilt and anger. More specifically, subjects in the study read in the cover story that the advertisements can be used for other products and in many other ways.

The use of just a couple of the appraisals in Roseman's model has important implications for the expected emotional response to the experiment of this study. The number of discrete emotions that will be triggered is greatly reduced. In Table 1 the bold borders indicate the primary interest of this study.

As is schematically presented in Table 1, the focus of this study is on the emotions of dislike, anger, regret, and guilt. The next section will present the dimension of appraisals needed to elicit these emotions, and the documented effects that they have in motivation of interaction and attitudinal change.

Appraisals and effects of discrete emotions

The main goal of appraisal theories is to establish a person's judgments and evaluations of an event that influence the emotions felt. One of the most interesting elements of these evaluations is the argument for discrete emotions created by a combination of a relatively small number of dimensions or appraisals (Ellsworth 1994).

Before presenting the Roseman's appraisals that were manipulated in the experiment, it is important to explain how the other appraisals of the model were controlled. All of the emotions presented are negative, so these affective states have in common a motive-inconsistent appraisal. That is, all negative emotions, according to Roseman et al.'s theory (1996), require that the event is viewed as an obstacle to an individual's goal.

Another appraisal that will have no major interest in this dissertation is certainty. Although it is very important to discriminate, say, fear from sadness, the appraisal of likelihood does not have a forecasted effect on the emotions that this dissertation is concerned with. Please refer to Table 1 to observe the lack of influence of this dimension according to the most recent version of Roseman's emotion system in the emotions that are the focus of the proposed research.

Finally, the agency and characterological dimensions will be truncated, as was mentioned above, because this dissertation does not investigate the emotions elicited by events judged to be caused by circumstances nor in evaluations that consider the event a permanent characteristic of the agent.

The two appraisal dimensions that will be manipulated in the study will be agency and control, the combination of these dimensions divided in low/high levels lead to four discrete emotions: dislike (low control/other agency), anger (high control/other agency), regret (low control/self agency), and guilt (high control/self agency). The following paragraphs will explain the major traits of these discrete emotions.

Dislike

Dislike, based on Roseman's (Roseman et al. 1996) most recent version of his theory, is defined as the result of an event deemed to have low control potential, and caused by another person.

The effects of dislike on affects and cognitions are very clear according to Roseman, et al. (1996). A person who feels dislike has disapproving thoughts and a judgment of unattractiveness of the person who is disliked. In terms of actions, dislike triggers action tendencies of rejection and disassociation. Finally, the emotivation goals (Roseman et al.'s term for motivations triggered by emotions, the objective of which is to satisfy a misbalance created by the emotion) represent the desire to distance oneself from or to be unlike the disliked person or event.

In terms of attitudinal change, the current literature has no direct results. Unfortunately, this is not an unique problem for the emotion of dislike (Nabi 1999). However, considering the motivations of physical and personal distance found by Roseman et al. (1996) and the perspective of affect as an argument (e.g., Petty et al. 1993), it is possible to forecast a negative attitudinal change for a stimulus that could be the source of dislike.

Anger

Similar to dislike, anger is a negative event considered to be caused by another person. To discriminate both emotions, it is necessary to use the appraisal of control. For anger, the control potential is high, while dislike requires a low level of control (Frijda 1986, Roseman et al.1996, Smith and Ellsworth 1985).

An even more similar emotion is contempt, since it shares the same appraisal dimensions, with the exception of the characterological dimension. More specifically, an event considered an intrinsic trait of the person generates contempt, while an assessment that the event is non-characteristical results in anger. This appraisal is similar to Scherer's (1984) arguments concerning the need to evaluate events according to their intrinsic nature.

Another way to separate anger from contempt was proposed by Smith and Ellsworth (1985). The authors mentioned in their study that events where contempt was present involved interpersonal relationships, while anger was present in many other types of situations besides interpersonal problems.

Anger is one of the few discrete emotions that has been studied, although it has not been examined as in-depth as fear in terms of its effects on cognitions, motivations and attitudinal formation (Nabi 1999). Roseman et al. (1996) found that anger is characterized by thoughts of violence towards others, and strong beliefs of injustice, action tendencies of hitting and/or yelling, and motivations to hurt someone or get back at someone. Similar antecedents and effects of anger have been presented by Frijda and Mesquita (1994). In an innovative study Dillard, et al. (1996) found that anger, as expected, was negatively correlated with attitude change.

It is important to note that Frijda (1986) regards anger as a sign of hope. An obstacle causes anger when the individual knows that the goal is still on the other side of the roadblock. Anger, then, is a call to action because an individual knows that the goal is still attainable. If not, despair would settle in the person's psyche.

Regret

The assessment of an event as self-caused and having low control potential, in addition to the previously mentioned appraisal dimensions, leads to feelings of regret (Roseman et al. 1996). This emotion, as well as dislike, is not mentioned in other appraisals theories (Frijda 1986, Scherer 1984, Smith and Ellsworth 1985).

Regret brings thoughts of a mistake made, or an opportunity lost. Also, regret makes people want to correct a mistake and do everything over again in order to improve their performance.

The body of literature that explores the effects of regret on areas like decision making (Reviewed by Gilovich and Medvec 1995) and particularly in consumer research (Inman and Zeelenberg 2002) is relatively rich compared to the study of other emotions in areas related to consumer behavior. Unfortunately, the literature is mostly silent about the effects of regret on attitudinal change and other persuasion outcomes (Nabi 1999). However, returning to the approach of affect as information (Clore and Gasper 2000, Petty et al. 1993), attitudinal change could not occur considering that the negative feelings are towards the self and not in the direction of the event. Also, regret could have a positive effect considering that people having these emotions might feel a need to revisit the event in order to "redeem" themselves. This motivation to return creates the need to have a positive attitude toward the event in light of theories like Osgood, Suci and Tannebaum's (1957) congruence theory.

Guilt

Guilt exhibits similar appraisal dimensions to regret and shame; all of these emotions are negative and self-caused. In order to discriminate regret from guilt, it is

necessary to evaluate the appraisal of control. Guilt is caused by high levels of potential control. However, shame is also an emotion that needs a judgment of high control potential. Therefore, the only appraisal dimension that separates shame from guilt is the characterological nature of the event. If a person assumes that the event has an intrinsic nature, the emotions elicited will be of shame, while a non-characterological nature will elicit the emotion of guilt. A different conceptualization is given by Ellsworth (1994) who reports that guilt is the only negative emotion to have high levels of self-responsibility.

Roseman et al. (1996) anticipate that a person who feels guilt will think about being wrong, and that he shouldn't have done what he did. The immediate action of this person would be to apologize, and the motivation triggered by guilt would be to make up or be forgiven. That is, guilt motivates individuals to perform some type of corrective behavior (Frijda and Mesquita 1994).

The effect of guilt on persuasion processes has not been studied extensively, except in few works like a short paper by Yinon, Bizman, Cohen and Segev (1976). The authors, using a guilt-arousal construct, found that this emotion influences yielding to the message persuasiveness in a curvilinear fashion where low and high levels of guilt have a limited effect compared to the optimal persuasion capability of moderate guilt.

The next chapter briefly summarizes the objective of the dissertation and presents the development of hypotheses that delineates the generation of the four discrete emotions and their effect on thoughts, attitudes and behavioral intention.

CHAPTER 3

HYPOTHESES DEVELOPMENT

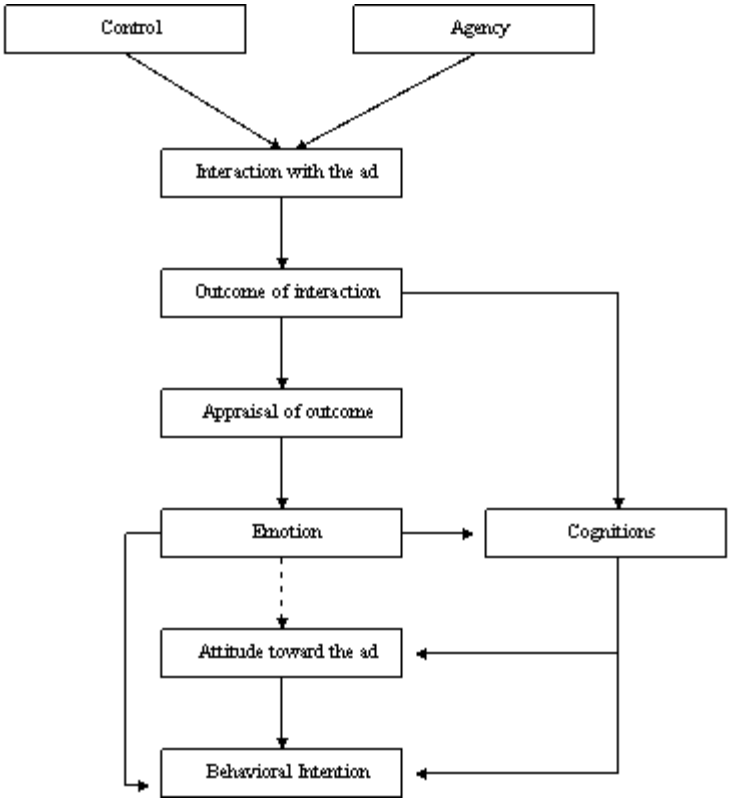
This study presents an exploration of discrete emotions as an outcome of the interaction of a user with an interactive medium. More specifically, subjects in high or low levels of involvement will interact with an interactive ad. Based on Roseman (2001) appraisal theory, two characteristics of the ad (control and agency) will be manipulated in order to obtain different and discrete emotions.

The discrete emotions generated by the appraisal of the event, an interaction between user and an ad, will have distinct patterns of influence over attitude and behavioral intention. The mechanism of the transfer of emotion to attitude and to behavior will depend also on the involvement of the subjects during the interaction with the ad.

Figure 1 contains a diagram that represents the flow of expected emotional and cognitive processes during the experiment. The flow of the experiment begins when a subject's interaction with an ad triggers a certain outcome, in this case negative. The subjects' appraisal of the event based on the agency and control manipulations will lead to discrete negative emotions that will influence cognitions, attitudes and behavioral intention. The relationships between the emotions and the attitudinal measure will be moderated by involvement. More specifically, the hypotheses presented below forecast that only in the low involvement condition the emotions have an effect on attitudes (Petty et al 1993).

The next section outlines the hypothesized effects of agency and control in the creation of discrete emotions and presents the hypotheses that describe the different effects of emotion on attitudes and behavioral intention. Also a set of hypotheses will explain the effects of control on attitudes and cognition.

Figure 1
Diagram of Emotional and Cognitive Flow of the Experiment



----> Low Involvement

Hypotheses for Emotion Elicitation

The basic assumption of appraisal theories is that specific combinations of judgment dimensions elicit particular discrete emotions (Roseman and Smith 2001). As

an illustration of this basic tenet of appraisal theories lets suppose that an individual runs over an opossum while driving on a highway. The individual can judge the event as low in control ("there was nothing I could do to stop the car") and self-agency ("I was driving recklessly and the opossum had the right of way"). According to Roseman's (2001) model the individual would feel regret ("I guess I should had to slow down"). However, if the individual deems the event as low in control and other-agency ("Of course opossums get killed if they act as if they owned the road") the emotion elicited by the event would be dislike. In this case the person might have thoughts of rejection ("those opossums are ugly things"). In this section the hypotheses about the four combinations of agency (self/other) and control (high/low) and the emotions elicited by these combinations are outlined.

It is important to warn again that the emotions in this study are not elicited by the content of the ad but by the interaction between a person and an ad and the outcome of this interaction. The interaction with an ad can be appraised, as in any human activity, to form discrete emotions (Frijda and Zeelenberg 2001). For example, perceptions of low or high levels of control of the information flow are expected to trigger the appraisal of control and therefore the emotions created by the ad will be different in a message that allows for higher or lower levels control. In Roseman's (2001) theory, low control in a motivational inconsistent event leads to an emotion labeled dislike. This feeling is related to rejection. On the other hand an emotion like anger, which elicits the desire to strike back, would be created in the same situation in which the only change is the level of control (Roseman et al.1996).

Similarly, agency, an assessment of who is responsible for the negative valenced event, affects the emotional response to the event. According to Roseman (2001) when the source of the emotion is one's self, an emotion like regret would be elicited. However, if the source of the emotion is another person or entity, in this case an interactive ad, the emotion elicited could be dislike.

The precise discrete emotion that will be created by the interaction between the ad and the person is determined by the combination of Agency and Control. Based on Roseman et al.'s (1996) emotion system, (Please refer to Table 1) and the phenomenology, behaviors and goals that differentiate emotions it is hypothesized that:

H1a: When the outcome of the interaction with an interactive ad is appraised as negative and caused by the user, low levels of control allowed by the advertisement will lead to more feelings and thoughts characteristic of regret than in the other three possible combinations of Control (High/low) and Agency (Self/other).

H1b: When the outcome of the interaction with an interactive ad is appraised as negative and caused by the user, high levels of control allowed by the advertisement will lead to more feelings and thoughts characteristic of guilt than in the other three possible combinations of Control (High/low) and Agency (Self/other).

H1c: When the outcome of the interaction with an interactive ad is appraised as negative and caused by the interactive message, low levels of control allowed by the advertisement will lead to more feelings and thoughts characteristic of dislike than in the other three possible combinations of Control (High/low) and Agency (Self/other).

H1d: When the outcome of the interaction with an interactive is appraised as negative and caused by the interactive message, high levels of control allowed by the advertisement will lead to more feelings and thoughts characteristic of anger than in the other three possible combinations of Control (High/low) and Agency (Self/other).

This first set of hypotheses posits control and agency dimensions of the interaction between a user and the ad as generators of particular discrete emotions. In the following section the effects of these particular discrete emotions in attitudes and behavior will be hypothesized.

Hypotheses for effects of emotion on attitudes and behavior

Prior to outlining the hypotheses about the effects of emotion on attitudes and behavioral intention, it is required to present the major theoretical framework for the hypotheses development.

It is been "known" for a very long time that emotions influence beliefs and cognitions. Some philosophical perspectives as well as some researchers perceived emotions as distortions of thought while more recent perspectives view emotions as legitimate and useful influencers of cognition. However, the knowledge of the effects of emotion on thought has not been tested empirically as many times, or rigorously as desired (Frijda, et al. 2000).

Researchers like Clore and Gasper (2000) view emotions as a feedback system that allows an organism to evaluate the environment and determine what element of this environment requires attention, the most salient elements of the complex environment (i.e., appraisals), and establish which goals should be activated.

Emotions as indicators of goal relevance and triggers of action tendencies are one of the most important issues in appraisal theories (Smith and Kirby 2000). Each emotion has its unique pattern of phenomenology, physiology, expression, behaviors and emotivations. The latter element, emotivations, are the goals that people want to attain when an emotion is experienced (Roseman 2001).

The main reason why emotions differ on their impact in attitudes is the type of motivation that is typical, and different, for each discrete emotion. One conceptualization of attitudes see them as a combination of experiences, beliefs and feelings. How these three components of attitudes are clustered together to create an attitude is moderated by the most accessible motivations (Maio and Olson 2000). Therefore, it follows that high levels of a goal characteristic of one discrete emotion will impact the development of attitudes differently than the rest of the discrete emotions.

The link between the motivational goals elicited by each emotion and behavioral intention is clear since the characteristic emotivations are based on some type of action. For example as was suggested in the previous chapter, anger is typified by action tendencies of hitting and/or yelling, and motivations to hurt someone or get back at someone.

In this section all the hypotheses are based on the goal patterns found by Roseman et al. (1994) in their empirical research since their model is the major foundation of this study.

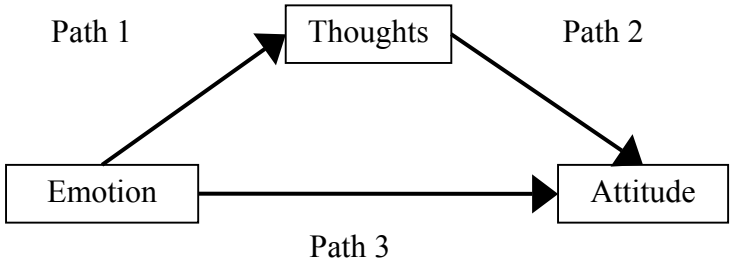
Another clarification before presenting the outline of the different effects of the four emotions of interest on attitudes is to present the effects of involvement as a moderator of the relationship between emotions, cognition and attitudes. After the

hypotheses about the effects of emotion on attitudinal measure, a section that explains the indirect effect of control on attitudes is presented. Finally the effects of emotions, cognition, and attitude toward the ad on behavioral intention are summarized.

Effects of emotion on attitude toward the ad

Petty et al. (1993) investigated the effect of mood in attitude formation. Their findings suggest that involvement plays a moderating effect on the integration of thoughts and affect. More specifically, in low involvement scenarios subjects used moods and thoughts to create their attitudes, while in high involvement, affect has an exclusively indirect effect via cognitions. Following the nomenclature of Figure 2, in the case of low involvement Path 1, 2 and 3 would be significant while for the case of high involvement Path 1 and 2 would have a significant effect on attitudes.

Figure 2
Involvement's Moderating Role (Petty et al. 1993)



Petty et al.'s (1993) findings indicate that it regardless of the level of involvement subjects will integrate their emotions to cognitions. The argument of emotions informing thoughts makes sense for low level of affect like moods (Bagozzi et al. 1998). Actually, mood was the affect construct measured in Petty and colleagues' (1993) study. However

for the four particular emotions of interest in this study the relationship between feelings and cognitions is not as clear. Emotions like regret and guilt are correlated to thoughts about the person's performance during the interaction. For example, one of regret's trait thoughts is "what a mistake I made" while for guilt thoughts are of the nature of "I think that I was wrong". In other words, these emotions do not have information about the ad, the information provided by the emotions is useful just for personal self-improvement (Roseman et al. 1994) Then:

H2a: Regret will not be correlated to cognitions about the ad
H2b: Guilt will not be correlated to cognitions about the ad

On the other hand, anger and dislike contain information about the entity that created the situation. Thoughts of disapproval and unattractiveness of the other are symptoms of dislike while anger triggers thoughts like unfairness. In other words, the main information that is communicated by these emotions are about the source of the negative-valenced event (Roseman et al. 1994).

H2c: Dislike will be negatively correlated to cognitions about the ad.
H2d: Anger will be negatively correlated to cognitions about the ad.

The path between each emotion and attitudes is, according to Petty et al. (1994) moderated by involvement. Involvement works, metaphorically speaking, as a switch that allows the relationship described by the path to be significant in certain cases (Baron and

Kenny 1984). In the particular example of involvement as a moderator it is expected that emotions will affect the attitude toward the ad exclusively in the low involvement manipulation.

H3.1: Exclusively in the low involvement situation the discrete emotion will be significantly correlated to attitude toward the ad.

Discrete emotions have particular patterns of response in terms of motivation, feelings and thoughts (Roseman et al. 1996). Dislike and anger have negative effects on attitudes (Dillard et al. 1996) while regret and guilt might have positive effects on attitudes (Yinon et al. 1976).

Regret's motivational trait is the desire to improve self-performance and to obtain a second chance (Roseman et al. 1994). These motivations are not related to the ad so the motivation of regret should not affect the attitude toward the ad measure

H3.2.a: Regret will have no significant correlation to attitude toward the ad

Similarly to regret, guilt is a self-conscious emotion (Fischer and Tangney 1995). However, the motivation goals are different. People who suffer guilt are motivated by the goals of being forgiven and a desire to make up for their mistakes. These accessible motivations might create a need to express a positive attitude toward the ad even though the emotion felt is negative. That is, a guilty person might feel the need to make amends with the ad though a positive evaluation of the ad if the guilt is moderate (Yinon et al. 1976).

Yinon et al. found an inverted-U effect of guilt on persuasion acceptance. In this research, the non-monotonic relationship is not expected since the levels of guilt elicited by the interaction with the ad are expected to be moderate at best. Izard (1992), as well as Frijda (1994), warns that laboratory studies are unable to create high levels of emotional response.

H3.2.b: Guilt will be positively correlated to attitude toward the interactive ad.

Desire to hurt someone and a motivation to be unlike someone are the characteristic drivers of anger and dislike, respectively (Roseman et al. 1994). Both of these motivations elicited by these emotions are directed to the wrongdoer, to the person or entity that provoked the negative situation. In this particular study this entity is the ad so it is expected that these motivations will lead to negative attitudinal measures for the ad.

H3.2.c: Dislike will be negatively correlated to attitude toward the interactive ad

H3.2.d: Anger will be negatively correlated to attitude toward the interactive ad

Other effects of involvement were not hypothesized in the current study since the focus of this research is the subjects' judgment of their interaction with the ad, not on how much attention they paid to the arguments presented or the effectiveness of these arguments. In other words, this dissertation focuses on the interaction, not on content or the individual (the traditional approach when using the Elaboration Likelihood Model),

therefore there is no perceived need to explore other effects of involvement. However, this concentration on one effect of involvement should not convey the importance of the multiple effects of involvement in message processing. In the future research section some research ideas are proposed.

Effects of Control on Attitudes and Cognition

There is a substantial amount of research that identifies the benefits of control. One of the first authors to present arguments in favor of control is Arnold (1960). The author, one of the founders of appraisal theory, believed that high control leads to positive emotions such as joy and affection, moderate low control elicits anger, and extremely low control creates feelings like fear. Interestingly, in an empirical test of diverse appraisal theories, Roseman et al. (1990) found that in an empirical test of their theory and the models developed by Arnold (1960) and Scherer (1994), Arnold's hypotheses were the only ones that had empirical support. In other words, Roseman and colleagues (1990) found that high levels of control were mainly found in positive emotions, and low levels of control were found in negative emotions.

Authors have discovered that control of the situation offers benefits such as improved performance in adverse environments (Sherrod, Hage, Halpern and Moore 1977), makes positive emotions stronger (Frijda 1986), and helps in the creation of interest and optimism (Skinner 1996).

Scholars of consumer behavior have not thoroughly examined the variable of control. One of the few pieces of research present in the literature used perceived control of a retail environment as a mediator of emotional responses during service encounters (Hui and Bateson 1991).

In studies of interactive media, authors like Ariely (2000), Aylesworth et al. (2000) and Dunwoody and Eveland (2001) have found that control, with certain caveats, has a positive influence on affective responses like satisfaction.

However there is also a negative side of control. Controlling the information flow or navigation has cognitive costs. That is, people need to use part of their cognitive assets to decide which path is the best (Ariely 2000, Dunwoody and Eveland 2001). The investment of cognitive abilities has been linked to negative affect (Garbarino and Edell 1997). Also researchers like Bezjian-Avery et al. (1998) found that control of an interactive advertisement does not necessarily means a better attitude toward it since there are many personal moderators like styles of learning (i.e., visual vs verbal).

H4: Control of the ad will have no significant effect on attitude toward the ad.

This hypothesis does not mean that subjects' evaluation of an ad will not consider the advantages of controlling a medium. One belief of social cognition theory is that the evaluation of an stimulus or a situation is based on the current cognitive structures of the subjects (Markus and Zajonc 1985). Web surfers are used to higher levels of control that allow them to transverse the information according to their desires and wants. Some researchers even say that consumers have more control on the Web than manufacturers and service providers. (Roehm and Haugtvedt 1999). Therefore, it is expected that the elicitation of thoughts about the ad will be negatively impacted by lower feelings of control. This is expected because subjects of the study will become aware during the cognitive description of the interaction between them and the ad of their cognitive

structures in which the low control ad might be viewed less positively than the high control ad. In other words, in the moment that subjects will need to express their thoughts during the interaction with the ad they will compare it to prior experiences with interactive ads.

H5: Control of the ad will be positively correlated to cognitions about the ad.

A caveat of this hypothesis is the assumption that users prefer more than less control. It is assumed in this dissertation that users will prefer more control since the task of the experiment requires learning about a complex product that requires traversing of the information available on the ad. Ariely's (2000) findings clearly demonstrate that high levels of information control are better to learn about a product's attributes.

The reliance of cognition as the main path between processing of a message and attitudinal measures is one of the major assumptions of the ELM and other information processing models (Petty et al. 1993) This assumption is also one of the most common criticisms from researchers who posit emotion as the major player in ad processing (Morris, Woo, Geason and Kim 2002). In this study the conservative approach will be taken and cognitions will play the major role of attitude creation.

H6: Cognitions about the ad will be positively correlated to attitudes toward the ad.

Effect of emotions, cognitions and attitudes on behavioral intention

The last three hypotheses deal with behavioral intention, a vital outcome of ad processing. First, the richness of the knowledge obtained from appraisal theories of discrete negative emotions allows this study to hypothesize different relationships between the four emotions of interest in this study and behavioral intention.

Using Roseman et al.'s (1994) action tendencies for discrete emotions the effect of each discrete negative is hypothesized as follow. First, feelings of regret tend to motivate people to an intention to correct the mistake done. A regretful person wants a second chance. This motivation to redo the flawed performance should provoke people to interact again with the ad.

H7a: Regret will be positively correlated to desire to interact again with an interactive ad.

Second, guilt although similar to regret in many ways, its action tendencies are more internalized (Roseman 2001). In other words the action tendencies are about activities that might help undo what has been done and a desire to punish oneself (Roseman et al. 1994). These action tendencies indicate avoidance of the subject to the source of the emotion so the hypothesis for guilt is laid out as follows.

H7b: Guilt will have no significant correlation to desire to interact again with an interactive ad.

The third emotion is dislike. The action tendencies that are related to this emotion are about rejecting the object or person that caused the negative event. The action tendencies clearly indicate that people who strongly feel this emotion would not like to interact again with the message.

H7c: Dislike will be negatively correlated to desire to interact again with an interactive ad.

Finally the fourth emotion is anger. For this emotion it is expected that the more the subjects of the study feel this emotion the more they will like to interact again with the ad with the main objective of "getting back at". If the angry subjects think that reevaluating the ad negatively will cause some damage to the ad (i.e., two negative evaluations are worse than just one) then they would be inclined to interact again with it.

H7d: Anger will be positively correlated to desire to interact again with an interactive ad

Cognitions about the ad also influence behavioral intention. Lavine, Thomsen, Zanna and Borgida (1998) recently provided one of the most eloquent examples of how affect, cognition and attitudes interact with behavior. It is expected, then, to find a significant positive relationship between cognitions about the ad and desire to interact again with the interactive ad.

H8: Cognitions about the ad will be positively correlated to desire to interact again with an interactive ad.

The classical studies in attitude toward the ad (A_{Ad}) and other attitudinal measures suggest that there is a positive relationship between attitudinal measures and behavioral intent (Maio and Olson 2000). Behavioral measures used in advertising and consumer behavior include such measures as purchase intention (e.g. Aaker et al.1987, Batra and Ray 1986) or store visits (Yoo, et al. 1998). It is expected to find a positive relationship between attitude toward the ad and desire to interact again with an ad.

H9: Attitude toward the interactive message will have a positive relationship with intention to interact again with the message.

The nine hypotheses presented in this chapter will be tested in an experiment that will manipulate on an online procedure involvement, control and agency.

CHAPTER 4

METHOD

In order to test the hypotheses presented in the previous chapter, a 2 (high/low involvement) x 2 (high/low control) x 2 (agency: other/self) factorial design online experiment was developed. In the following section an explanation of the online procedures, the reasons for this methodology and technologies used to create the Web-based questionnaires and experiment is provided. This chapter also describes the stimulus development, manipulations, pretests and main study.

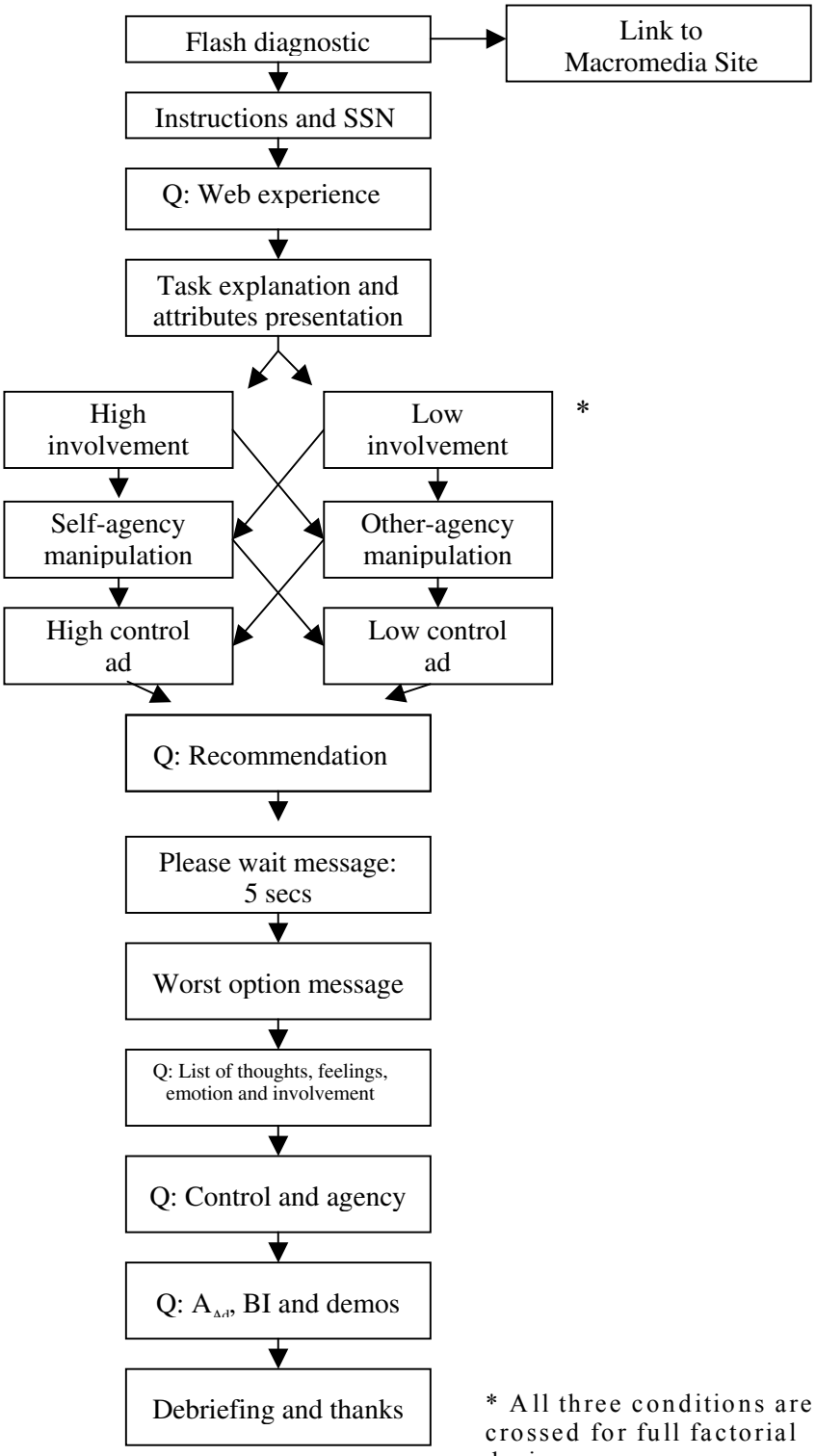
Experiments on the WWW

The experiment and pretests were performed in their entirety on the WWW except for the initial invitation. The researcher visited classrooms of introductory and advanced classes offered by the Advertising and Telecommunication departments at a Southeastern university to briefly explain the study and distribute consent forms that contained general information about the study, the time frame (usually a week) to participate in the online study, the Web site address that the subjects had to visit to participate in the study and the researcher's email and other contact information to be used for questions and comments. In Appendix A a copy of the informed consent can be found.

During the time specified in the consent form, the subjects accessed the experimental Web site working from any computer that was available at the time for them. The basic online procedure consisted of four major stages. First, the participants had to verify if the computer that they were using had Macromedia's Flash plug-in. Second, an initial page described what the participants should expect to do during the

study and some other instructions to ensure the completion of the study in one uninterrupted session. A brief questionnaire and a detailed description of the task that the subjects had to perform are the two major sections of the third stage. The fourth stage was the interaction with the ad, the question about the best model and the negative response from the software. The final stage was a questionnaire divided in 3 pages and a debriefing message. Figure 3 presents the flow of the full online experimental procedure.

Figure 3
Experiment's Web Pages Flow



* All three conditions are crossed for full factorial design.

Procedure justification

The experimental materials, questionnaires, pretest and full experiment procedures were performed in a Web-based environment. The subjects that participated in this study accessed the experimental materials using their own computers at home or at campus labs after being recruited for the studies in different classes. The decision to allow students to participate in the studies from any computer was based on two factors. First, many studies in psychology have found impressively similar results between studies done in laboratory settings at universities and online participation from subjects in different parts of the world (Krantz and Dalal 2000).

Second, a laboratory setting is not highly suitable since people who experience negative emotions tend to express vocally their feelings and tend to talk more to people around them (Johnstone, van Reekum and Scherer 2001). This is a very difficult problem to solve in a computer laboratory that does not allow for partition between computers. The option of doing the experiment using a very limited number of students per scheduled sessions was impractical considering the relatively large sample size required to analyze the data with structural equation modeling techniques (Raykov and Marcoulides 2000).

To control the online procedure the instructions of the experiment and the programming of the Web site were designed as follows. An initial page encouraged subjects to participate in the study in one uninterrupted session, with no co-participation during the study or the communication of their results to other potential subjects in the study. The full text of the initial page is presented in Appendix B. The program used to

run the procedures prevented the use of the back button on the subjects' Web browsers as well as kept track of the time taken by every subject to complete the study.

Technologies used in the experimental procedures

Since this experiment was designed for subjects accessing the World Wide Web from diverse locations and computers this study had as main priorities easy and fast download, minimum requirement of plug-ins, great levels of stability (i.e., low percentage of crashes produced by the Web pages' programming) and data gathering reliability.

In order to satisfy these priorities various decisions were made. The cover story pages, the explanation of the study, and the questionnaires used common fonts, simple colors, traditional buttons and a minimum number of graphics. All the Web pages were pre-tested by a professional Web designer and the researcher in various Macintosh and Windows-based computers using different monitor sizes and connection speeds to check the design of the Web pages and stability of the pages.

The rich-media advertisements were developed professionally using one of the standards on Web design, Macromedia's Flash Version 5. Also, the ads were planned to be simple with a sparse use of images and animations, yet elegant and containing all the information required to make a decision.

The experimental procedure was managed by e-Experiment (DeRosia 2000). This HTML and Java program was used since it provided great programming flexibility combined with randomization of conditions, timing of subjects' responses and easy and reliable data handling capabilities.

Stimulus Development

The ad message unit used in this research is based on a Messaging Plus ad (An example is available at http://www.cnetcreatives.com/newadstory/ index.html), which is a 300-by-360 pixels Web advertisement. Efficiently using the capabilities of Flash by Macromedia, this type of advertisement can be considered a Web site inside a Web site (Heim 2001).

The ad for the experiment included information for the selection of a Digital Music Player (DMP) from a set of models of a fictional brand. This product category was chosen since the shopping of this technology requires the evaluation of various complex attributes and it is a fairly familiar product for college-aged individuals (Haddad 2002).

The images and text of the ads emulate as close as possible the images and information content of a manufacturer's ad (i.e., Sony). In many ways, the ad is similar to an Interactive Home Shopping simulation (Ariely 2000) where information about different models and photos of the product is presented in different formats.

The brand and models used in the ad are fictitious to avoid the inclusion of previous experiences with a real brand. The brand name was the generic eplayer and the models consisted of combinations of letters and numbers that did not imply any meaning. In two of the pretests the open-ended questions were analyzed to look for problems or comments about the brand and model names. There were no comments about the brand or the models.

The Flash-based ads were esthetically equal. Photos of the models, the intro animation and background were exactly the same for the ads used in the two conditions (low/high control). In addition, the information about the products was exactly the same.

The main difference between the ads is that the low control ad only allows going forward by the click of a button while the high control ad allows to transverse the ad as the user's wants and needs.

Manipulations and Other Experimental Materials

The experiment required the careful manipulation of three variables. All these manipulations were pretested to ensure that they created the desired effect. The description of the pretests will be presented in the next sections but first it is necessary to explain how negative emotions were elicited using an event that was viewed by the subjects as motive inconsistent (Roseman 2001).

Motivate-inconsistent event

The motive consistency dimension is the most important element, in terms of explained variance, of the appraisal of a situation (Ellsworth 1994). Therefore, it is very important to ensure that the experiment creates such a kind of event.

All of the subjects in the study, after interacting with the ad and presenting their recommendation of the best DMP in the ad received the following message after waiting for the system "response" for a period of five seconds.

> Your recommendation is **definitively not the best option** when compared to the opinions of the panel of average consumers. Actually, you selected the worst model of the four presented in the ad.

It was expected that a message like the above should be motive inconsistent in a subject's mind since the message highlights in red "definitively not the best option" and rubs salt on the wound by spurting that the model selected is the worst of all. The motive

inconsistency assumption is based on the belief that subjects investing considerable amounts of cognitive resources while learning about the DMP models might need a response that boost their self-enhancement (Garbarino and Edell1997).

The appraisal of the motive-inconsistency of the negative news of the subject's performance will be tested by measuring the negative emotions described by the subjects using the items described by Roseman et al.'s (1994) for the four discrete emotions that are of interest in this study.

Involvement

As was mentioned earlier, situational involvement is the type of motivation that was elicited at two different levels (High/low) by the cover story. In the high involvement condition the cover story explained that the subject's participation was critical since the technology tested in the study will be used in the near future if this study was successful. Also the story stressed the importance of the subjects' participation by explaining that their performance will be the standard for subsequent studies since the subjects were Communication students in a well-respected university.

The low involvement manipulation was obtained by presenting a cover story where the subjects' participation was presented as a requirement that might lead, after this and other studies are done, to the use of the technology in some Web sites. Similarly as in the high involvement manipulation, the low involvement cover story stressed the fact that the subjects were communication students from a state university instead of the well-respected phrase.

The manipulation checks for involvement were extracted from Petty and Cacioppo (1979) and Petty et al. (1993). In this study, involvement was tested by a

statistical comparison of the manipulations measuring the number of thoughts listed by the participants in the study. Another manner to demonstrate the manipulation effectiveness are recall measures. Higher involvement should lead to higher recall. For this research the recall question asked in an open-ended question how many models the subject remembered after interacting with the ad. Finally, two statements were included as a 5-point scale ("I gave this decision a lot of thought" and "I thought a lot about the message before making this decision"). In Table 2 a reminder of the definition, a description of the manipulation checks measures and the text used for the cover story are presented.

Table 2
Involvement Manipulation

Selected definition	Manipulation checks	Method Cover Story
"Issues, situations, or messages can have significant consequence on, or be personally relevant to, one's own life" (Andrews et al. 1990)	1. Petty et al.'s (1983) open-ended: - Measurement of number of thoughts. - Recall questions. 2. 5-point scales: - I gave this decision a lot of thought. - I thought a lot about the message before making this decision.	<u>High Involvement:</u> Your effort to make a recommendation is critical. We expect to use this ad technology in many popular Web sites in the near future if people like you do a very good job learning from the ad. Also, since you are a Communications student in a well-respected university we firmly believe that your performance in this task is extremely important. <u>Low Involvement:</u> Your effort to make a recommendation is relevant. We might use this ad technology in some Web sites in the future if people like you do a fair job learning from the ad. Also, since you are a Communications student in a state university we believe that your performance in this task is somewhat important.

Control

Based on Ariely's (2000) experimental stimulus, control of the interactive advertisement implies control over the information presented, the duration of exposure to this information, and the possibility to decide what information should follow.

In the high control condition, the ad's information is available in linked modules that can be accessed at any time, and in any order, by the user. In other words, the ad presents the information in a similar fashion to a Web site, where the models' attributes are available in a hierarchical organization (model, attribute, value) and can be accessed according to the user's interest (Ariely 2000).

The ad in the low control condition will present information as a linear process where subjects' only option was a forward button to the next model. The hierarchical organization is presented linearly (Model 1, all attributes, all values for each attribute, Model 2, etc.). Appendix C includes the high/low control Flash-based ads created by a professional Web designer while Table 3 contains the definition of control, a description of the manipulation check and a depiction of the ads.

Table 3

Control Manipulation

Selected definition	Manipulation checks	Method Stimulus
Control over the information presented, the duration of exposure to this information, and the possibility to decide what information should follow (Ariely 2000).	1. Wu's (2000) - I was in control of my navigation through the interactive ad. - I was in control over the content of the interactive ad that I wanted to see. - I was in control over the pace of my visit to the interactive ad. 2. Roseman et al.'s (1996) - Believing I had no control at all over the ad. - Thinking that the ad was controlled by me	<u>High Control:</u> The information in the ad is available in linked modules that can be accessed at any time, and in any order, by the user Please see Appendix C for screen shots of the high control ad. <u>Low Control:</u> The ad presents the information as a linear process where subjects had exclusively the option of moving forward by clicking a button, to the next model.

Agency

The appraisal of agency is related to a judgment of who is responsible for the outcome of an event (Roseman et al. 1996). Self, others and circumstances are the three possible sources of causality but in this study, for reasons expressed beforehand, circumstance is not of interest.

Agency of self was elicited by communicating to the subjects who participated in this condition that they had the opportunity to select what type of ad they wanted to use to learn about the DMPs.

In the cover story's text it was also mentioned that people in other conditions of the study did not have the same ability to select the ad. There are two reasons for the inclusion of this fact in the cover story. First, the text reinforced the belief that the

subjects in this condition had more causality on the decision than other people. Second, the inclusion of this text made both conditions very similar in terms of length and conveyed information.

The participants made this decision using a nine-point range question anchored on one side by the option of an ad that had a large amount of information but took a long time to download while on the other side the option was an ad with a small amount of information but fast to download.

In the other-caused condition, the text and the question replicate the materials from the self-agency condition except that it was added the phrase "you DO NOT have the choice" and no question was asked. Table 4 presents a definition reminder, manipulation checks measures used and cover story for this manipulation.

Table 4
Agency Manipulation

Selected definition	Manipulation check	Method
Responsibility of an outcome can be attributed to self, other or circumstance (Roseman et al. 1990).	Roseman et al. (1996) Thinking that how I learned about the digital players was not at all caused by me Thinking that how I learned about the digital players was not at all caused by someone else	<u>Stimulus</u> The cover story will ask (not ask) the user to select the ad to be used in the study.
Definition		Method
Self Outcome of event is attributed to self	You can select which type of ad you want to see, while other subjects in this study will have no choice. Would you like to see an ad that: (Please select the option that best reflects your preference) Has a lot of useful information but takes a long time to download? ○ ○ ○ ○ ○ ○ ○ ○ ○ Does NOT have a lot of useful information but takes a short time to download?	
Other Responsibility of an outcome of an event is attributed to someone else.	You DO NOT have the choice of selecting the type of ad you will see although other subjects in this study are given a choice by responding to the following question.	

Pretests

Three pretests measured the effectiveness of the involvement, control and agency manipulations. The three pretests were performed online following very similar procedures. A fourth pretest was carried out to fine tune problems found in the three original pretests. The following sections will explain the objectives, procedure, sample, and results for each pretest.

Pretest 1

Objective of pretest

The objectives of the first pretest were to evaluate the effectiveness of the involvement manipulation and to determine if the experimental procedures created strong negative feelings.

Stimulus material

The ad used in this pretest was the high control option since it is a user-paced message that allowed for more interaction than the low control ad. The subjects in this pretest were exposed to the initial Flash plug-in diagnostics, instructions, task explanation, involvement manipulation, high control ad, negative news, and open-ended questions about feelings and thoughts as well as other scales to measure involvement.

Procedure

In April of 2002 the researcher invited students from two Advertising and one Telecommunications upper-division classes to participate in the pretests offering extra credit for their participation. The informed consent forms distributed in the classrooms contained three possible Web addresses, one for each pretest.

Sample

40 students participated in this pretest. Due to a programming problem that was later corrected for the main study the distribution of the subjects in the two conditions was unbalanced so 28 subjects (70% of the sample) participated in the low involvement condition and 12 subjects (30% of the sample) participated in the other condition.

Results

The two open-ended questions were coded by a research assistant who was unaware of the expectations for the manipulation check. Unfortunately, the four manipulations checks were statistically not significant but, as shown in Table 5 they were all in the right direction. One possible reason for this lack of discriminatory power between conditions might be the small number of subjects, particularly in the high involvement cell. Another reason could be that the text does not motivate a higher level of elaboration. The text was rewritten and tested in pretest 4. Also, other measures of involvement were created based on Petty and Cacioppo's research (1981 and 1984).

Table 5

Manipulation Checks for Involvement Condition

Condition N=40	High Involvement Mean n=12	Low Involvement Mean n=28	F
Number of thoughts and feelings[+]	2.07	1.58	2.187
Models recalled[+]	0.76	0.42	0.768
I gave this decision a lot of thought[++]	3.33	3.04	0.570
I thought a lot about the message before making this decision[++]	3.17	3.00	0.235

[+] *Open-ended*

[++] *5-point scale with 1=Completely disagree 5=Completely agree*

The emotional response to the experiment's event was gauged using Roseman et al's (1994) measurements of feelings and thoughts that are strongly linked to particular discrete emotions. These feelings and thoughts have been tested successfully using

contrast analysis in a series of empirical studies mentioned in the review by Roseman (2001).

Based on the data analysis it seems that the items that measure the discrete emotions of interest showed low levels of variance in particular for items that subjects used to express strong emotional reactions like “Felt that I’d explode” or “Felt blood rushing through my body”. These low levels were expected since it has been very difficult to create strong negative emotions in a laboratory setting, compared to real life. However, items that are less loaded with strong emotional words like “Thought of what a mistake I made” or “Felt cold toward the ad” had higher levels of variance.

Table 6 lists the items used to measure the four discrete emotions, their means and standard deviations.

Table 6

Means, Medians and Standard Deviations for Emotion Items (Roseman et al. 1994)

Item	Mean	Median	St Dev
Felt cold toward the ad	2.65	3.00	1.48
Felt a sinking feeling	2.78	3.00	1.40
Felt blood rushing through my body	1.68	1.00	0.94
Felt closed to the ad	2.63	3.00	1.27
Felt on guard	2.85	3.00	1.35
Felt tension in my head	2.05	2.00	1.21
Felt that I'd explode	1.45	1.00	0.85
Felt tension in my face	1.70	1.00	0.99
Thought of violence toward the ad	1.73	1.00	1.13
Thought that I disapproved the ad	2.80	3.00	1.42
Thought about a lost opportunity	2.78	3.00	1.25
Thought that I shouldn't have done what I did	3.05	3.00	1.36
Thought how unattractive the ad was	2.13	2.00	1.18
Thought that I was wrong	3.00	3.00	1.40
Thought how unfair the ad was	2.53	2.00	1.28
Thought of what a mistake I made	3.00	3.00	1.45

5-point scale with 1=Not at all and 5=Very strong

More than 10% of the subjects of the study blamed their negative performance to a misunderstanding. In their responses to the open-ended questions they explained that they clicked the Next button believing that this action would take them to the next page of the ad but they ended up in the recommendation page. This design flaw was fixed for the fourth pretest and the main study by writing a short description of what to do and a message that asked participants to please click continue until they had seen the four models in the ad.

Pretest 2

Objective of pretest

The objective of the second pretest was to evaluate the effectiveness of the control manipulation. Also, it was important to rule out that subjects conceptualized control as agency. That is, Roseman separates clearly agency as causation and control as ability/possibility to control a situation but Ellesworth (1994) cautions that they are quite similar in many theoretical frameworks.

Stimulus material

As it was described earlier two ads with similar traits except for the level of control of the information flow were used to create two different feelings of control over the ad. The subjects of this pretest were exposed to the initial Flash plug-in diagnostics, instructions, task explanation, one of two ads (control manipulation), negative news about the performance, and questions about control and agency.

Procedure

Pretest 2 followed exactly the same procedure of Pretest 1.

Sample

26 subjects participated in this pretest. In the low control cell 10 subjects (38% of the sample) participated while 16 participants (62% of the sample) took part in the high control manipulation.

Results

As shown on Table 7 the manipulation was successful in creating two distinct levels of perceived control across all measures. It seems that Wu's (2000) measures discriminate better the two conditions.

A secondary objective of this study was to make sure that control was not misunderstood as agency by the subjects. An analysis of variance of the two measures of self/other agency using the control groups (high/low) as the independent variable did not find a statistically significant difference (F=3.45, p=0.07 and F=2.68, p=0.115, respectively). Therefore, it seems that the subjects were able to differentiate agency from control.

Table 7

Manipulation Checks for Control Condition

Condition N=26	High Control Mean n=16	Low Control Mean n=10	F
Believing I had no control at all over the ad[+]	0.56	-1.40	4.73**
Thinking that the ad was controlled by me[+]	0.06	2.20	5.99**
I was in control of my navigation through the interactive ad[++]	3.88	2.50	13.78*
I was in control over the content of the interactive ad that I wanted to see[++]	3.63	2.20	12.54*
I was in control over the pace of my visit to the interactive ad[++]	4.00	2.50	11.45*

[+] *Bipolar scale with -4=Believing I had no control at all/Thinking that the ad and 4=Believing I had control/Thinking that the ad was NOT controlled*

[+] *5-point scale with 1=Not at all and 5=Very much.*

** $p<0.01$*

*** $p<0.05$*

Pretest 3

Objective of pretest

The objective of the third pretest was to evaluate the effectiveness of the agency manipulation and to ensure that there was a difference between the agency and control measures.

Stimulus material

The ad used in this pretest was the high control option. The subjects in this pretest were exposed to the initial Flash plug-in diagnostics, instructions, task explanation, agency manipulation, high control ad, negative news, and questions about control and agency.

Procedure

Pretest 3 followed exactly the same procedure of Pretest 1.

Sample

32 subjects participated in this pretest. 19 subjects (59% of the sample) participated in the self-agency manipulation while 13 participants (41% of the sample) took part in the other-agency manipulation.

Results

The items that measured self-agency and other-agency were not statistically significant and even the results show trends that contradict the expected results. That is, the self-agency manipulation elicited higher levels of other-agency and vice versa. One probable cause of this problem is the awkward adaptation of the original Roseman and his colleague's (1996) measures. For the last pretest and the main study the two items that measure agency were edited and other measures were created based on the definition of

agency. Another step taken to solve this problem was to edit the text used in the conditions using the definition of agency to differentiate them better.

Similarly to Pretest 2, the agency manipulation did not influence significantly the control measures. Table 8 lists the results of the manipulation checks.

Table 8
Manipulation Checks for Agency Condition

Condition N=32	Self Mean n=19	Other Mean n=13	F
Thinking that how I learned about the digital players was not at all caused by me	0.84	1.00	.061
Thinking that how I learned about the digital players was not at all caused by someone else	0.47	-0.62	2.65

[+] *Bipolar scale with -4*= Thinking that how I learned about the digital players was not at all caused by me *and 4*= Thinking that how I learned about the digital players was very much caused by me

Pretest 4

Objective of pretest

The fourth pretest was designed to accomplish three objectives. The first objective was to determine if the changes to the cover story made a stronger differentiation between the high and low involvement conditions. The second objective of this pre-test was to determine if the edited and new agency measures differentiated the conditions of this manipulation. Finally the pretest was an "acid test" of the whole experiment since the program was designed to run the full experiment from pretest 4 and on. Table 9 and 10 summarize the changes made to the cover story and the manipulation check measures for involvement and agency.

Table 9
Revised Involvement Manipulation

Manipulation checks	Method Cover Story
1. Petty et al.'s (1983) open-ended: - Measurement of number of thoughts. - Models recall question. 2. Petty and Cacioppo (1984) - It seems unlikely to me that my performance in this study will affect the launching of this type of advertising technology. 3. 5-point scales: - I was highly involved while learning about the players. - I spent a lot of time thinking about the players before making a decision.	<u>High Involvement:</u> Your effort to make a recommendation is critical. We expect to use this ad technology in many popular Web sites in the near future if savvy Web users like you do an extraordinary job learning from the ad. Also, since you are a Communications student in a well-respected university we firmly believe that your performance in this task will be the standard of great performance in subsequent studies. <u>Low Involvement:</u> Your effort to make a recommendation is required. We might use this ad technology in some Web sites in the future if this and many similar studies have comparable results. Also, since you are a Communications student in a university we firmly believe that your performance in this task will be the standard of performance in subsequent studies.

Table 10
Revised Agency Manipulation

Manipulation checks	Method Cover Story
1. Roseman et al.'s (1996): - I believe that I didn't choose how to learn about the digital players - I believe that somebody else chose how I was going to learn about the digital players 2. 5-point scales - The interactive ad that I saw during this study was NOT selected by me - The selection of the ad I viewed in this study was my own decision - I decided which type of ad I wanted to see in this study	<u>Self</u> You can select which type of ad you want to see, while other subjects in this study will have no choice. Would you like to see an ad that: (Please select the option that best reflects your preference)  <u>Other</u> You DO NOT have the choice of selecting the type of ad you will see although other subjects in this study are given a choice by responding to the following question. YOU CANNOT ANSWER THIS QUESTION Would you like to see an ad that: (Please select the option that best reflects your preference) 

Stimulus Material

The participants of the pretest were exposed to the full procedure. That is they saw the initial Flash diagnostics, instructions, task explanation, agency manipulation,

involvement manipulation, high or low control ad, negative news, and questions about control and agency.

Procedure

In June of 2002 the researcher invited students from two Advertising upper division classes to participate in the pretest. The informed consent forms distributed in the classrooms contained the Web address for this pretest.

Sample

39 subjects participated in this pretest. 21 subjects (54% of the sample) took part in the High Involvement condition and 18 subjects (46% of the sample) in the Low Involvement condition. For the Agency manipulation, 16 subjects (41% of the sample) participated in the Self condition and 23 (59% of the sample) participated in the Other condition.

Results

The changes to the involvement manipulation helped to better differentiate the two conditions. Even though just one of the measures was statistically significant, another scale was closer to significance ("I spent a lot of time thinking about the players before making a decision", $F=3.20$, $p=.082$). The rest of the measurements were in the expected direction except for one of the open ended questions (model recall, $F=0.09$, $p=0.77$). Table 11 summarizes the results of the involvement manipulation.

Table 11
Manipulation Checks for Revised Involvement

Condition N=39	High Involvement Mean n=21	Low Involvement Mean n=18	F
Number of thoughts[+]	1.50	1.38	0.13
Brand's models recalled[+]	0.94	1.06	0.90
It seems unlikely to me that my performance in this study will affect the launching of this type of advertising technology[++]	3.19	3.39	0.28
I was highly involved while learning about the players[++]	2.56	1.79	4.26**
I spent a lot of time thinking about the players before making a decision[++]	3.48	2.82	3.20

[+] *Open-ended*
[++] *5-point scale with 1=Completely disagree and 5=Completely agree*
** *p<0.05*

The absence of a strong differentiation between conditions might be due to the small sample size. Also, in the open-ended questions some of the subjects mentioned that the names of the models were too difficult to learn.

In this pretest the agency manipulation had a similar problem to Pretest 3. It seems that the wording of Roseman et al.'s agency measures might have been difficult to interpret by the subjects so the results do not show any significant differentiation between the conditions. However, two of the three scales created based on the definition of agency were the basis for very strong differentiations between the conditions. "The selection of the ad I viewed in this study was my own decision", F=12.15, p=0.001, "I decided which

type of ad I wanted to see in this study", F=7.99, p=0.008). Table 12 presents the most important elements of the analysis of variance.

Table 12
Manipulation Checks for Revised Agency

Condition N=39	Self Mean n=16	Other Mean n=23	F
I believe that I didn't choose how to learn about the digital players	-1.63	-1.43	0.06
I believe that somebody else chose how I was going to learn about the digital players	-0.56	-1.39	1.37
The interactive ad that I saw during this study was NOT selected by me	3.44	3.83	0.633
The selection of the ad I viewed in this study was my own decision	2.69	1.43	12.15*
I decided which type of ad I wanted to see in this study	2.56	1.43	7.99*

[+] *Bipolar scale with -4= I believe that I didn't choose how to learn about the digital players and 4= I believe that I choose how to learn about the digital players*
[++] *5-point scale with 1=Not at all and 5=Very much*
* *p<0.01*

The researcher is not aware of technical or misunderstanding problems in this pretest.

In summary the first three pretests helped in the development of more effective manipulations of involvement and agency as well as the inclusion of new measures. Also misunderstandings like the meaning of the "next" option on the page that contained the ad was found and resolved for the last pretest. The full run of the experiment as a pretest

also permitted the researcher to evaluate the stability of the experimental procedures and questionnaires on an online environment.

Main Study

After four pretests, the 2x2x2 factorial design study was prepared to run the major study. The next sections will explain the variables and operationalization used, the full procedure of the study, a note about some possible criticism and a description of the sample obtained for this study.

Variables in the study: Operationalizations and measures

The next section explains how the diverse constructs used in the experiment will be operationalized and measured. The traditional division of variables in dependent and independent measures does not apply to this study since the full set of variables will be tested in a set of structural equation models where variables are dependent and independent (Rykov and Marcoulides 2001).

Involvement

This type of involvement is related to how "issues, situations, or messages can have significant consequence on, or be personally relevant to, one's own life" (Andrews et al. 1990). As was mentioned before, this variable will be manipulated to create two conditions, high and low situational involvement.

The manipulation checks were based on Petty et al.'s (1993) and Petty and Cacioppo (1984) open-ended measurement of free recall, number of thoughts and assessment of the likelihood of the event. According to Petty and his colleagues, subjects in the high involvement condition should have a better recall performance, a higher

number of thoughts and a significant higher level of expressed likelihood that the evaluations made by the subject will be used to determine if the technology is introduced in the market or not. These questions and their measurement type are presented in Table 13.

Table 13
Questions Used to Measure Involvement

Question/Items	Type of measurement
1. Please list all the thoughts and feelings that you had while you were interacting with the ad	Open ended
2. Please list the model names that you remember from the interactive ad	Open ended
3. Indicate the button that best describes your involvement during this study • I gave this decision a lot of thought. • I thought a lot about the message before making this decision. • It seems unlikely to me that my performance in this study will affect the launching of this type of advertising technology	5-point scale

Control

Control is one of the main manipulations of this research. Control will have two levels (low/high), where the first will allow for low control over the information flow, while in the high condition subjects will have control over the information displayed, over how long they will see it and over what information will come next. The effectiveness of this manipulation will be measured using perceived control from Wu's (2000) interactivity scales. Also, Roseman et al.'s (1996) items that measure control of an event will be used. Table 14 lists the questions and items used to measure this variable.

Finally, other items were created to assess the particular traits of the definition of control of this study.

Table 14
Questions Used to Measure Control

Question/Items	Type of measurement
1. Indicate the button that best describes your opinion for the following I believe that I had no control at all over the ad — I believe that I had a lot of control over the ad. I was able to control the ad — I was unable to control the ad	9-point bipolar scale
2. Please answer these questions about the interactive ad • I controlled my navigation through the interactive ad I saw • I controlled the content of the interactive ad that I wanted to see. • I controlled the pace of my visit to the interactive ad I saw I controlled the information presented in the interactive ad I saw • I controlled the length of time the information was presented in the interactive ad I saw	5-point scale

Agency

Another important manipulation is the appraisal dimension of agency. According to Roseman et al.'s (1996) work, agency is concerned with whether events are caused by the self or another person. The interactive ad will have two conditions that reflect who is responsible for the outcome. In summary, the manipulation will consist of presenting the subjects with ad selection options or not. The manipulation check will be tested using Roseman et al.'s (1996) agency items and other measures created based on the definition of agency. A list of the questions can be found in Table 15.

Table 15
Questions Used to Measure Agency

Question/Items	Type of measurement
1. Indicate the button that best describes your opinion for the following I believe that I didn't choose how to learn about the digital players — I believe that I choose how to learn about the digital players I believe that somebody else chose how I was going to learn about the digital players — I believe that nobody else chose how I was going to learn about the digital players	9-point bipolar scale
2. Please answer these questions about the interactive ad • The interactive ad that I saw during this study was NOT selected by me • The selection of the ad I viewed in this study was my own decision • I decided which type of ad I wanted to see in this study	5-point scale

Web expertise

Even though Web expertise was not manipulated nor controlled, this research measured this variable to later be used as a mediator on the planned analyses. It is expected that this covariance will be non significant since the experiment and the advertisements were designed to be fairly simple to use.

Consumers' prior knowledge is formed by expertise and familiarity. Expertise is the ability to perform product-related tasks successfully" and familiarity is "the number of product related experiences that have been accumulated by the consumer" (Alba and Hutchinson 1987 p. 411). This variable will be measured applying the commonly used GVU's (1999) Web experience questionnaire and other measures used by Eveland and Dunwoody (2001). Table 16 lists the items for both measures and the types of measurements utilized.

Table 16
Questions Used to Measure Web Expertise.

Question/Items	Type of measurement
1. Please check the box next to each statement if you have performed the following activities online. Check as many boxes as apply to you. • Ordered a product/service from a business, government or educational entity by filling out a form on the Web • Made a purchase online for more than $100 • Created a Web page • Customized a Web page for yourself (e.g. MyYahoo, CNN Custom News) • Changed your browser's "startup" or "home" page • Changed your "cookie" preferences • Participated in an online chat or discussion (not including email) • Listened to a radio broadcast online • Made a telephone call online • Used a nationwide online directory to find an address or telephone number • Taken a seminar or class about the Web or Internet • Bought a book to learn more about the Web or Internet	Dichotomical (Yes/No)
2. If 1 were to represent a Web novice (beginner) and 10 were to represent a Web expert, what number would you say represents your experience level in using the WWW?	10-point scale

Discrete emotions

Roseman et al.'s (1994) items to measure feelings and thoughts related to the four discrete negative emotions, dislike, regret, anger and guilt, will be used using a 5-point likert scale. The items used in this study are listed in Table 17.

Table 17
Questions Used to Measure Discrete Emotions

Emotion	Question/Items	Type of measurement
Dislike		5-point scale anchored by Not at all to Very Strong.
Feelings	Felt cold toward the ad	
	Felt closed to the ad	
Thoughts	Thought that I disapproved the ad	
	Thought how unattractive the ad was	
Anger		
Feelings	Felt blood rushing through my body	
	Felt that I'd explode	
Thoughts	Thought of violence toward the ad	
	Thought how unfair the ad was	
Regret		
Feelings	Felt a sinking feeling	
	Felt tension in my head	
Thoughts	Thought about a lost opportunity	
	Thought of what a mistake I made	
Guilt		
Feelings	Felt on guard	
	Felt tension in my face	
Thoughts	Thought that I shouldn't have done what I did	
	Thought that I was wrong	

Cognitions

The study of involvement usually requires for a measure of cognition (Petty et al. 1984, Petty et al. 1993). In this study the number and valence of thoughts generated by the interaction with the ad are measured by an open ended question that was later coded by coders who did not know the hypotheses of the study.

Two coders determined for each subject the number of thoughts and the valence (positive, neutral or negative) for each thought. An initial agreement ratio reached 0.89. The disagreements were recoded by the coders after a discussion between them about the nature and valence of the thoughts. The formula to compute Total Thoughts as a variable is:

$$TT = \sum ITxV$$

Where TT is total number of thoughts, IT is individual thoughts and V is valence of the thought (coded as +1, 0 -1).

Attitude

Attitudinal measures of advertisements have a long tradition in advertising research. The consensus among researchers is that A_{ad} is defined as "Predisposition to respond in a favorable manner to a particular advertising stimuli during a particular situation" (Mackenzie et al. 1986 p. 130). The measurement for A_{Ad} was extracted from the work of Cho (1999) since this author measured attitudes to interactive advertising. Table 18 lists the items used to measure $A_{ad.}$

Table 18
Questions Used to Measure Attitude toward the Ad

Question/Items	Type of measurement
1. Please indicate if you agree with the following statements • I like this ad • This ad is entertaining • This ad is useful • This ad is important • This ad is interesting • This ad is informative • I would enjoy seeing this ad again • This ad is good	5-point scale anchored by Strongly Disagree to Strongly Agree

Behavioral intention

Generally, the final outcome of emotions and attitudes is a measure of behavior or behavioral intent (Holbrook and Batra 1987). In this study, behavioral intention will be

defined as "the degree to which a person has formulated conscious plans to perform or not a behavior" (Davis and Warshaw 1992, p. 393). The measurement of behavior intention will consist of a question that asks about the desire to interact with a similar ad in the future and a dichotomical (yes/no) question that asks the subjects' desire to try again very soon. Theses questions are listed in Table 19.

Table 19
Questions Used to Measure Behavioral Intention

Question/Items	Type of measurement
1. If I find an ad like this on a Web site I will interact with it	5-point scale anchored by Definitively No to Definitively Yes
2. The evaluation of the ad is over, but would you like to try again to interact with a very similar ad for a different product tomorrow or early next week?	Dichotomical (Yes/No)

Procedure

Undergraduate students enrolled in a College of Communication of a Southeastern university were invited to participate in an online study. The researcher visited two introductory classes in Advertising and Telecommunications as well as an intermediate advertising class in early summer 2002. The potential subjects received an informed consent form that included the Web address to participate in the study and a time frame (a week) to participate in the study. They were also informed of the amount of the extra credit points that the participants of the study would receive.

After the completion of a questionnaire asking about use of computers and familiarity with the Internet, the subjects read a cover story. The information given to the subjects explained that they were about to interact with a new type of ad. This ad is a "Web site within a Web site" which contains large amounts of information that can help a person to learn more about a product. For this particular study, the subjects learned, the interactive advertisement will present information about digital media players. The information presented in the ad will be used by the subjects to recommend the best model of a digital player considering the parameters evaluated as more important by a panel of consumers.

After reading this part of the cover story, a table with attributes like numbers of formats that the DMP can play and the values of these attributes for different models of one brand of digital players was presented. The values of the attributes for the different models were created, according to the cover story, by a panel of consumers. Unfortunately, the cover story said, these models were out of stock so the subject had to select the best choice from a set of new models of players, which have slightly different values. The information of attributes and their values for each model was presented in the interactive advertisement. This type of task, labeled agent decision-making, has been used previously in the study of consumer decision-making on off line (West 1996) and online environments (Ariely 2000).

The first manipulation was involvement. The subjects learned in the high involvement condition that their participation in this study was very important since their performance would affect the use of this new type of advertising in popular Web sites. On the other hand, students on the low involvement condition read on the cover story that

the study was one of many studies to assess this new type of advertisement that might be used in different types of Web sites.

The second manipulation presented to the subjects was agency. The subjects after reading the involvement manipulation received one of two messages. The self-agency message presented the options to learn about the players accessing ads with a large or small amount of information. Meanwhile, the subjects in the other-agency received a message stating that other subjects had a choice of advertisements but they did not have a choice, therefore they had to interact with a specific interactive ad to learn about the players.

The final manipulation was control. The subjects participating in the high control condition interacted with an ad that was similar to a fully interactive Web site. The subjects in the low control condition saw an ad that showed the next set of information after the participants clicked on a forward button.

Following the subjects' interaction with the advertisement, a new window popped up and asked for a recommendation based on the information displayed in the ad. Once the subjects entered the recommendation, the ad "processed" the results for 5 seconds and popped up a new window telling that the recommendation was wrong, that the best choice was another model available in the ad.

Immediately after this message, the subjects answered online questionnaires for emotion, perceived control and agency, their thoughts, attitudes and behavioral intent. The final part of the questionnaire asked about demographic data. A final screen was presented to the subjects debriefing them about the real nature of the study, asking them not to talk about the study with other people and thanking them for their participation.

Possible criticisms to the procedure

There are two major sources of criticism in the procedure of this study . The Internet requires a high level of engagement from the user and since the Internet is more complex (Heeter 1989) than, say, television, some individual differences must be considered integral elements in any study of its effects. Two of the most widely used individual differences in the study of the World Wide Web and interactive advertising are knowledge, in terms of expertise and familiarity with the medium, computer use or online shopping (Eveland and Dunwoody 2001, Wu 2000, Yun and Lee 2001), and the goals of the visit to a site or a surfing session (Li and Bokovac 1999, Hoffman and Novak 1996, Wolfinbarger and Gilly 2001).

The comparison of experts and novices in the use of interactive medium has found that experts tend to perform more efficient searches (Holescher and Trube 2000, Khan and Locatis 1998) and show less apprehension towards computers (Smith et al. 2000). This study does not manipulate expertise toward interactive ads because it is assumed that the WWW among many audiences like the subjects of this study is as familiar as a mass medium (Morris and Ogan 1996). Also, an adequate random assignment of subjects to the different conditions will assure that individual differences like expertise is balanced (Maxwell and Delaney 1990).

In terms of goals, studies show that there are two types of Web users: people who surf the Web for entertainment purposes, or people that look for specific information. Both motives create different effects on behavior and attitude formation. The proposed methodology for this study controlled for this Web behavior through the type of task. The cover story and the stimulus design should make people engage in an information-

seeking mode rather than a surfing mode (Li and Bokovac 1999, Hoffman and Novak 1996, Wolfinbarger and Gilly 2001) that might influence the subjects of the study to avoid or leave unfinished the task to be performed.

Sample of Main Study

A convenience sample of 247 students enrolled in classes offered by the Advertising and Telecommunications departments of a College of Communication of a Southeastern university participated in this study. They were offered extra credit points for their participation in the study.

The data for seven of the subjects was discarded because they mentioned in an open ended question that they did not see in its totality the advertisiement since they clicked on the continue button before they finished checking the ad.

The final sample of 240 participants consisted of 156 females (65% of the sample) and 83 males (35%). The age mean and mode of the sample was 22 years old of age. This is a relatively homogeneous sample since 81% of the sample is between 20 and 23 years of age. The most frequently mentioned major of the sample was advertising (49% of the sample), followed by Public Relations (18%), Telecommunications (16%) and Journalism (3%). The participants of the study were mainly junior (45%) and senior (42%).

The participants of the study seem to have an average knowledge about the Internet compared to the standard of US surveys of Web users, the Graphic, Visualization and Usability Center (1999). More than 80% have participated on online discussions, used online directories (74%) or ordered information or a product online (64%). The less common activities were the fairly sophisticated or uncommon practices of customizing a

Web site (31%), changed cookie preferences (29%) or read a book to know more about the Internet (16%). A global index of the thirteen online activities, where yes=1 and no=0, had a mean of 0.49 and a median of 0.50. Table 20 presents the Web activities asked in the questionnaire.

Table 20
Subjects' Web Activities

Activities on the Web	Freq.	%.
Participated in an online chat or discussion (not including email)	199	83%
Used a nationwide online directory to find an address or telephone number	178	74%
Ordered a product/service from a business, government or educational entity by filling out a form on the Web	153	64%
Changed your browser's "startup" or "home" page	150	63%
Listened to a radio broadcast online	136	57%
Made a purchase online for more than $100	119	50%
Created a Web page	110	46%
Taken a seminar or class about the Web or Internet	104	43%
Made a telephone call online	87	36%
Customized a Web page for yourself (e.g. MyYahoo, CNN Custom News)	74	31%
Changed your "cookie" preferences	69	29%
Bought a book to learn more about the Web or Internet	38	16%

The intermediate use of the Web measured by the global index is confirmed by a question that asked the participants' subjective level of Web expertise. The mean for this type of knowledge was 6.4 where 1=novice and 10=expert. However, the majority of the subjects had more than three years of experience using the Web (87%).

One interesting result is the time spent online. Compared to the last GVU Center's study (1999), the sample's time spent online is lower than the GVU's sample. 40% of this study's sample spent 10 or more hours on the Web weekly, while in the GVU's sample the percentage is 56%. One possible interpretation for this result might be that the

participants of this study use the Web less frequently than the general population. However, the latest GVU survey was completed in 1997 and there is recent research that shows that Internet users are less online in 2001 (Fox and Rainine 2001). Table 21 compares GVU's results with this study's.

Table 21
Comparison between Weekly Time Spent Online for Participants of the Study vs. GVU's 8th Survey

	Sample+		GVU
Time	Freq	%	%
0-1 hour	9	3.8	2.0
2-4 hours	52	21.8	11.1
5-6 hours	54	22.6	15.1
7-9 hours	27	11.3	16.1
10-20 hours	54	22.6	31.9
21-40 hours	28	11.7	16.9
41+	15	6.3	6.7

+N=239

Among the general population digital media players are a relatively new technology but among college students is a fairly well known electronic gadget. The online questionnaire for this study asked the subjects' level of expertise using digital players. The results indicate that the vast majority of the sample knew what a digital media player is and had a medium level of knowledge about the technology. Only 1.7% of the sample indicated that they did not know anything about this device. In a scale where 0 is no knowledge, 1 is novice and 10 is expert; the mean of the sample was close to the middle point (M= 4.63).

CHAPTER 5

RESULTS AND DISCUSSION

This chapter presents the results of the main study. First, an analysis of the manipulation checks and reliabilities of the major constructs are offered. Prior to the testing of the hypotheses the theoretical underpinnings of structural equation modeling and its use to test the hypotheses shown in Chapter 3 is presented. After these analyses, tests of the hypotheses will be presented by using contrast analysis for hypothesis 1. The hypotheses 2 through 9 will be tested using structural equation modeling.

For hypothesis 1 the contrast analyses presented in this section used each particular discrete emotion as the dependent variable and the combination of the agency and control manipulations as the independent variables. More specifically, four contrast analyses were performed where the independent variable was a categorical variable that consisted of the four conditions of agency and control (High control/Other, High control/Self, Low control/Other, Low control/Self) and the dependent variable was one of the four discrete emotions measured. The analysis was repeated for the other emotions. This type of method echoes the analysis of discrete emotions and their distinctive feelings, thoughts, and actions associated with them (Roseman 2001).

Hypotheses 2 to 9 were tested applying structural equation modeling since the objective of these hypotheses was to determine the combined (or lack of) effects of emotion, cognition and control in attitudes toward the ad and behavioral intention with the consideration of involvement as a moderator between emotions and attitudes. Since it was hypothesized different relationships between each emotion and cognition, attitudes

and behavioral intention four models were tested (one for each emotion). Two of the models required some adaptations of the original paths between constructs in order to obtain models with good fit indices.

Preliminary Analysis

Prior to the testing of the hypotheses it is necessary to ask some basic questions about the experiment's ability to create the required motivation and beliefs. The answers will be provided by manipulation checks and reliabilities of the constructs used in the main study.

Involvement manipulation check

The measurement of involvement based on Petty and Cacioppo's (1984) work was the question used to gauge subjects' level of involvement during the study.The question asked in a 5-point scale how much the subject agreed with the statement "It seems unlikely to me that my performance in this study will affect the launching of this type of advertising technology". For all the subsequent analyses the question was reverse-coded so high levels of the variable indicates high involvement.

An analysis of variance shows that subjects in the high involvement condition were more prone to believe that their performance would affect the launching of the new type of advertisement ($F=4.45$, $p=0.036$). The differences between conditions using the results of the open-ended questions for number of models recalled and number of thoughts as the dependant variables were not significant, however they pointed to the expected direction. Table 22 summarizes the most important elements of the analyses of variance for the manipulation check.

Table 22
Manipulation Checks for Involvement Condition
Main Study

Condition N=240	High Involvement Mean n=128	Low Involvement Mean n=112	F
Number of thoughts and feelings[+]	1.81	1.65	1.27
Models recalled[+]	1.17	1.07	0.30
It seems likely to me that my performance in this study will affect the launching of this type of advertising technology[++]	3.03	2.70	4.45**

[+] *Open-ended*
[++] *5 point scale with 1=Completely disagree 5=Completely agree*
***p<0.05*

Control manipulation check

The control measurements consisted of Wu's (2000) control measures of his interactivity scale and two other items designed to measure more specifically the information control issues raised in this study.

A reliability analysis indicates that the most reliable combination of factors is an item originally from Wu's scale and one of the new items. The correlation between the items "I controlled the content of the interactive ad" and "I controlled the information presented in the interactive ad" is 0.763 which is significant at the $p<0.01$ level.

An analysis of variance of the control two-item scale as dependent variable and the control manipulation as independent variable indicates that the high control ad ($M=4.49$, $n=116$) elicited higher levels of control than the low control ad ($M=4.09$, $n=124$). This difference is statistically significant ($F=3.22$, $p<0.05$).

Agency manipulation check

Since the original Roseman et al.'s (1996) measures were difficult to understand by the subjects, a set of three new items were created. The reliability analysis shows that the removal of one of the items ("The interactive ad that I saw during this study was NOT selected by me") creates a more reliable measure (an α increase of 0.07). The correlation between the two remaining items ("The selection of the ad I viewed in this study was my own decision" and "I decided which type of ad I wanted to see") is 0.79. This correlation is significant at the $p<0.01$ level.

The analysis of variance of the manipulation check demonstrates that the manipulation was successful in creating high and low levels of agency. The self-agency condition elicited higher levels of the two-item agency scale ($M=2.66$, $n=112$) than the other-agency condition ($M=1.88$, $n=128$). The difference between the conditions is statistically significant ($F=27.90$, $p<0.01$).

Agency and control differentiation

As in the pretests, the differentiation of the agency and control manipulations was tested to ensure that the agency manipulation had no influence on perceptions of control and the control manipulation had no effect on the subjects' determination of agency.

The results of analyses of variance show that the agency and control manipulations do not have a significant cross-effect. The analysis of variance where the agency manipulation was used as the independent variable and the measurement of control as dependent suggest that there is a certain relationship between agency and control measure ($M_{Self}= 2.74$, $M_{Other}= 2.51$). However, this relationship is not significant ($F=2.23$, $p=0.137$).

Similarly, the control manipulation, independent variable, and agency measure, dependent, used in an analysis of variance show that there are no significant effects (M_{HC}= 2.24, M_{LC}= 2.25, F=0.001, p=0.95).

Other constructs' reliabilities

Each of the four emotions of interest was assessed by two items that measure feelings and two that measure thoughts. Previous research has linked these feelings and thoughts to dislike, anger, guilt and regret (Roseman et al. 1996). As shown in Table 23 all the measures of the emotions were reliable near the acceptable level of 0.70 (Hair, Anderson, Tatham, and Black 1998).

Table 23

Reliabilities of Emotions Measurement

Emotion	Item	α
Anger	Felt blood rushing through my body Felt that I'd explode Thought of violence toward the ad Thought how unfair the ad was	0.686
Dislike	Felt cold toward the ad Felt closed to the ad Thought that I disapproved the ad Thought how unattractive the ad was	0.725
Guilt	Felt on guard Felt tension in my head Thought that I shouldn't have done what I did Thought that I was wrong	0.704
Regret	Felt a sinking feeling Felt tension in my face Thought about a lost opportunity Thought of what a mistake I made	0.699

Another construct that requires an assessment of its reliability is attitude toward the ad. As expected due to the long tradition of this measure, A_{Ad}'s reliability based on the eight items used was relatively high (α=0.886). The high reliability of this attitudinal measure might indicate how measures developed in traditional media research can be used in new media without any apparent shortcomings.

Behavioral intention results

In an experimental setup where subjects are randomly chosen to participate in a study, behavioral measures might not be strong enough due to the lack of relevance of the situation to the subjects.

Unfortunately, the data of behavioral intention suggests that subjects' desire to interact with a different ad was relatively low. On a four-point scale where 1=definitively not to 4=definitively yes, 72% of the subjects selected 1 or 2 as their answer for the question. The mean and standard deviation also indicate low levels of interest in a second trial of the interactive ad (M=1.94, Std Dev=0.848). The repercussions of this problem will be presented in the general discussion section.

Hypotheses Testing

This section presents the tests of the hypotheses previously developed. The first hypothesis was tested using contrast analysis. This hypothesis forecasts the effects of two of the manipulations (control/agency) of the experiment as emotion elicitors. Hypotheses 2 to 8 lay out the paths of influence of the constructs measured in the study; therefore they were tested in a series of structural equation models. Specifically, four models were developed to analyze the diverse effects of the emotions on attitudes and other constructs.

Prior to the testing of these hypotheses, a presentation of some important issues about structural equation modeling is presented.

Hypothesis 1: Appraisals and emotions

Hypothesis 1 predicts that a combination of high/low levels of control and self/other agency and will lead to stronger feelings of a distinct discrete emotion. As a reminder of the appraisal model developed by Roseman (2001), Table 24 outlines the hypothesized effects of control and agency as appraisals of a motive-inconsistent situation.

Table 24
Control and Agency as Emotion Elicitors

Agency	Control: Low	Control: High
Self	Regret	Guilt
Other	Dislike	Anger

The first set of hypotheses is designed to respond to the question, does this discrete emotion is stronger in this condition than in the other conditions? The test of this hypothesis applies contrast analysis since the theoretical underpinnings and design of the study does not indicate the application of omnibus tests like a general analysis of variance. An analysis of variance might lead to erroneous results since this study is not interested in detecting statistical differences between all the conditions but between the condition that is relevant in the hypothesis and the other three cells of the experiment (Rosenthal and Rosnew 1985). This focused analysis of variance has been used in appraisal studies done by Roseman (2001) and Roseman et al.'s (1996) to detect the particular effects of emotions.

Four items measured each emotion. These four variables per emotion were collapsed into four indices, called dislike, anger, and so on, using a simple summation and then dividing by the number of items used.

The basic mechanism to obtain each of the four contrast analyses needed to support or reject H1 is as follow: The means and standard deviations for the four emotions of interest in the four conditions (Low control/Other, Low control/Self, High control/Other, High control/Self) are calculated. After these calculations are performed, an analysis of variance that contrasts the mean of one of the emotions measured in one of the conditions against the other conditions is completed. This procedure is preformed four times, one for each condition of interest.

The contrast analyses were completed using a Windows-based software called PSY (University of South New Wales 2000). This software was selected for its flexibility to program the contrast analyses.

H1a predicts that in the condition of low control and agency-self, subjects will report higher levels of regret than the subjects in the other three conditions. According to Table 25 the mean of this cell is higher than in the other three cells, and the difference is statistically significant ($F=7.92$, $p=0.005$). Therefore H1a is supported.

Table 25
Contrast Analysis for the Four Emotions

Agency	Control: Low	Control: High
Self	$M_{Regret}=2.88^{+}$ $M_{Guilt}=1.45$ $M_{Dislike}=2.51$ $M_{Anger}=1.85$ n= 71	$M_{Regret}=2.21$ $M_{Guilt}=1.70^{+}$ $M_{Dislike}=2.34$ $M_{Anger}=2.17$ N= 59
Other	$M_{Regret}=2.43$ $M_{Guilt}=1.86$ $M_{Dislike}=2.75^{+}$ $M_{Anger}=2.27$ n= 53	$M_{Regret}=2.33$ $M_{Guilt}=1.79$ $M_{Dislike}=2.48$ $M_{Anger}=2.28^{+}$ N= 57

$^{+}$Condition of interest for condition
$F_{Regret}=7.92$, $p<0.01$
$F_{Guilt}=0.001$, Not significant
$F_{Dislike}= 3.557$, $p<0.05$
$F_{Anger}= 0.97$, Not significant

It was hypothesized in H1b that subjects who participated in the high control/self manipulation will feel stronger feelings of guilt than the subjects who participated in the other three conditions. Table 25 shows that there is no clear differentiation of the conditions' means of guilt. H1b is not supported by the contrast analysis since there are no significant differences between the cell of interest and the other three cells (F=0.00, p=0.975).

H1c forecasts that participants in the Low control/Other condition will experience higher levels of dislike than the participants of the other conditions. The contrast analysis shows that this particular combination of control and agency elicited in the subjects stronger feelings of dislike than the participants in the other conditions (F=3.56, p=0.049). Hypotheses 1c is supported by the contrast analysis of variance. Table 25 includes the most important elements of the contrast analysis.

H1d hypothesized the elicitation of stronger feelings of anger among the subjects who participated in the High control/Other agency condition compared to the subjects who participated in the other conditions. Contrast analysis of this emotion found that subjects in this condition indicated higher levels of anger but the difference between this and the other conditions is not statistically significant ($F=1.97$, $p=0.32$). H1d is not supported by the contrast analysis. Table 25 presents the means, the number of subjects per condition and other important information extracted from the contrast analysis.

In summary, the conditions of control and agency based on appraisal theories were able to elicit the forecasted emotions in two of the four conditions. More specifically, regret and dislike were the two emotions that were supported by the data. It is very interesting that these two emotions share low control as one of the appraisals manipulated. This result might lead to the conclusion that the low control manipulation is closer to the appraisal of control than the high control manipulation. The reason why high control was not effective to elicit the forecasted emotions (guilt and anger) is an excellent question for further studies.

Hypotheses 2 to 9: The effects of emotion and control on cognition, attitudes and behavior

Prior to the test of Hypotheses 2 to 9, the reasons for the type of analyses that were applied and models developed in structural equation modeling are presented.

Structural equation modeling

Structural equation modeling are increasingly popular second-generation multivariate techniques (the first includes techniques like factor analysis, discriminant analysis among others) that offer the researcher great flexibility to create models where

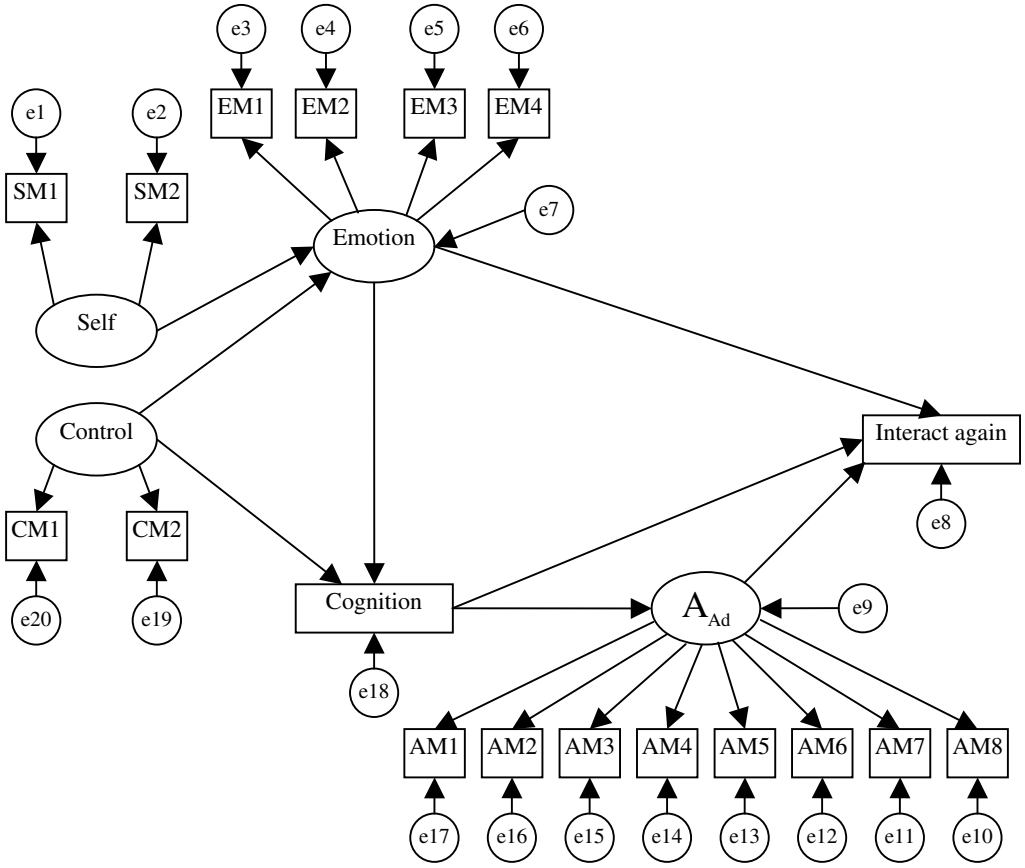
unobservable latent variables can be linked to observable constructs (Chin and Newsted 1999).

This family of techniques has two limitations. First, the sample size required to obtain statistically sound and stable models is relatively large. Second, the modeling techniques used by SEM are heavily influenced by non-normal data (Stevens 1996). Unfortunately, both problems are present in this study. The following two sections will explain the decisions made to test the hypotheses using SEM.

Sample size

SEM requires relatively large data sets. A conservative norm asks for at least 15 subjects per measured variable used in the model (Hair, et al. 1998). As shown in Figure 4, the full model proposed tests all the hypotheses (H1 to H8) using 18 measured variables. Considering the general rule of at least 15 subjects per variable the minimum recommended sample equals 270. The final sample for this study is 240 so it is not advisable to run a full model.

Figure 4
Full Structural Equation Model

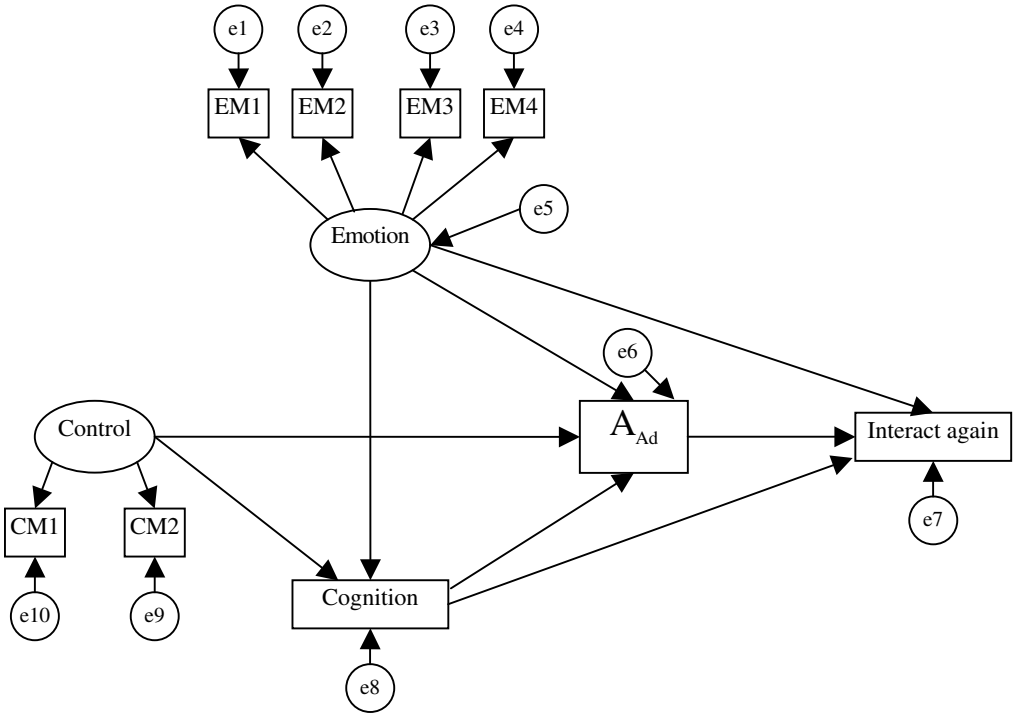


A small sample might affect the stability of a model (Bentler and Chou 1987), therefore the model had to be simplified. One of most obvious solutions was to use A_{Ad} in the model as a measured variable. That is, a sum of the eight items used to measure attitude toward the ad divided by 8. The construct and items are well known in the advertising literature and the reliability was high (α=0.89). This decision will affect the model but the high reliability should minimize the problems associated with using an observed variable instead of a latent variable. Another construct that was eliminated of

the tested model was agency since this construct does not play any role in hypotheses 2 to 9.

This pair of simplifications reduces the number of measured variables used in the model to 9, dropping the minimum sample size to 135 subjects. This is 56% of the size of the sample of this study. Figure 5 presents the simplified model that was tested.

Figure 5
Revised Structural Equation Model



Non-normal data

As it was previously mentioned, SEM requires data that is normally distributed. Using the normality tests available in AMOS it was found that 38% of the measured

variables that are included in the models have critical ratios of skewness that are above +2 or below –2. This means that the variables are not distributed normally.

Besides the measures of skewness, AMOS also reported multivariable kurtosis of the measured variables that were used in each model. The general rule of this measure designates values between 0 and 1 as negligible non-normality, 1 to 10 as mild non-normality and more than 10 is regarded as severe non-normality (Arbuckle and Wothke 1999).

Table 26 indicates that two variables common to all the models, one variable exclusive of guilt and one of dislike and all the variables of the anger model have non-normal skewness. In terms of multivariable kurtosis, only the anger model was non-normal.

Table 26

Skewness Critical Ratios and Multivariate Kurtosis Critical Ratios

Variable label	Skew / Kurtosis CR
Common variables	
Control	
Content	1.445
Information	3.517*
Cognition	-1.471
Attitude toward the ad	-1.151
Behavioral Intention	2.575*
Regret Model	
Sinking feeling	0.238
Tension in my face	7.488*
Lost opportunity	1.718
Mistake I made	0.478
Multivariate kurtosis	*-0.047*
Guilt Model	
On guard	0.116
Tension in my head	0.871
Shouldn't have done it	0.079
I was wrong	-0.067
Multivariate kurtosis	*0.050*
Dislike Model	
Cold toward the ad	-0.508
Close to the ad	0.948
Disapproved	0.284
Unattractive	3.756*
Multivariate kurtosis	*0.192*
Anger Model	
Blood rushing	7.584*
I'd explode	11.269*
Violence	8.259*
Unfair	2.365*
Multivariate kurtosis	*6.137**

**Non normal values*

The most recommended and parsimonious strategy to deal with the non-normality of the data is to use a bootstrap technique (Mooney and Duval1993). Bootstrapping is a

technique created to replace the statistical assumptions needed to calculate parameter estimates and standard errors with empirical observations obtained from samples of the original data (Hair et al. 1998).

The two-step process to use a bootstrap technique begins with the assessment of the overall model fit using the Bollen-Stine corrected *p*-value. If the BS-Bootstrap is equal or higher than 0.05 the model is considered to be adequate. After this rigorous test the researcher should look at the other goodness of fit indices. The final step is to apply bootstrap techniques to create the regression weights, standard errors and significance tests of the parameters.

Goodness of fit measures

Structural Equation Modeling does not have a definitive measure of significance like analysis of variance has, so it is necessary to present a series of goodness of fit measures to evaluate every model (Bryne 2000, Hair et al. 1998). The first fit of goodness measures used to evaluate any structural equation model is the chi-square p value. This measure is the only one in these types of techniques that is inferential, meaning that it is possible to infer the results to larger populations.

Chi-square value tests the null hypothesis that the model fits the analyzed covariance matrix flawlessly (Raykov and Marcoulides 2000). A chi-square value of less than .05 or 0.01 means that the actual and predicted matrices are statistically different. In other words, the model does not predict accurately the real data. Therefore, values over 0.05 indicate that the model fits the data well. Even though chi-square values can infer the results to a larger population, they depend on sample size so very large or very small

samples might produce conclusions that are erroneous. The chi-square limitations can be avoided using descriptive goodness of fit measures.

The more traditional descriptive index is the goodness of fit index (GFI). The closest measure in traditional multivariate analysis to GFI is R^2 in regression analysis. Both indices measure the fraction of variance and covariance that a model is able to explain. The GFI range between 0 and 1 where one indicates that a model explains completely the data's variance. Even though there is no specific point to determine when a model fits well the data, a general rule is that a model that reaches a GFI of 0.95 or above is a good model (Hu and Bentler 1999).

Two alternative goodness of fit index are the Tucker-Lewis (TLI) and the root mean square error (RMSEA). The first index compares the chi-square of the null model with the chi-square of the proposed model in order to determine the model's parsimony. This measure ranges between 0 and 1 and it is considered that levels of 0.90 or greater a recommended value (Hair et al. 1998). Finally, RMSEA is a commonly used index that measures the level of proximity between the data and the model. An advantage of this measure is that it is considered non sample-dependant (Raykov and Marcoulides 2000). A RMSEA with values equal or smaller than 0.05 indicates that the proposed model fits the data adequately (Byrne 2000).

The hypotheses of this study are represented in the structural equations models as the paths that connect variables (latent and measured). The significance of the parameters of the models' paths will be used as the test for each hypothesis. In this family of techniques the test of significance of the parameters is the critical ratio ($p<0.05$ or 0.01). In cases where the sample size is large the parameters that are found non-significant are

taken out of the model but the lack of significance does not necessarily mean that the parameters should be extracted in model testing that uses small sample (Bryne 2000).

Due to the nature of hypothesis testing in structural equation modeling, instead of organizing the results by hypotheses, the next sections explain the structural equation models for each emotion (regret, guilt, dislike and anger) in which each hypothesis is tested.

Results of regret model

The structural equation model proposed for regret is exactly the same as the one presented in Figure 5. The difference between the model described in this figure and the regret model is that the four items that measure Regret replace the generic EM labels. Also the signs of the parameters will be specified according to the hypotheses.

The first statistic needed to assess the goodness of fit of the model is the Bollen-Stine corrected *p*-value. This measure indicates a good fit between the data and the model if the value is higher than 0.05. The B-S p-value suggests that the regret model does a good job in explaining the relationships between variables (p=0.412). A similar conclusion is reached by the probability of chi-square since is higher than the recommended threshold (p=0.376), the TLI is close to one (TLI=0.994) and RMSEA is lower than 0.05 (RMSEA=0.017). All the indices strongly suggest that the model fits well the data.

H2a forecasts that regret does not influence the subjects' thoughts about the advertisement. The parameter's critical ratio suggests that it is not significant (p=0.323). The structural equation model proposed for Regret supports H2a.

According to H3.1, regret impacts attitude toward the ad in the low involvement manipulation while in the high involvement condition the effect of the emotion should be negligible in $A_{Ad.}$

As it was explained in the hypothesis development, involvement is a moderator (Kenny and Baron 1983) that affects the nature of the relationship between emotions and attitudes (Petty et al. 1983). The most recommended strategy to evaluate the significance of a moderator that is categorical (high involvement n=128 / low involvement n=112) and a numerical predictor (regret) is a multigroup analysis (Bryne 2000, Joreskog 2001). In this type of analysis the sample should be split according to the groups created by the experimental manipulation of involvement. The parameter of interest, in this case the Regret>Attitude toward the ad, is fixed so in both samples' models the parameter is the same.

The last step is to calculate a nested model comparison. This measure contrasts the fixed model with a non-restrictive model where the parameter is allowed to be different between the samples. If the p-value of the nested model comparison is higher than 0.05 the hypothesis that determines that both models are different is rejected. In other words, a probability higher than 0.05 indicates that in the two involvement models the Regret>Attitude parameter is not statistically different. This would lead to the rejection of the hypothesis that forecasts that involvement is a moderator between an emotion and attitude toward the ad.

The nested model comparison in the regret framework is higher than 0.05 (p=0.144) so H3.1, the moderation role of involvement, is rejected. The collapse of high and low involvement as a one condition does not create a significant result either. The

parameter between Regret and A_{Ad} is not significant since the critical ratio is above 0.05 (p=0.257). Hypothesis 3.2.a is not supported.

H4 and H5 predict that control of the ad will have no effect on attitudes toward the ad but this ad trait will have a positive effect on the thoughts elicited about the ad, respectively. The p values indicate that H4 is supported by the model (p=0.141) and the model supports H5. The p-value is below 0.05 (p=0.045) and the standardized regression weight of the parameter is in the direction, positive, forecasted by the hypothesis (λ_4=0.196).

H6 maintains that cognitions about the ad will have a positive correlation with the attitude toward the ad. The results show a strong parameter where the p value is significant (p=0.00) and the parameter's standardized regression weight is the second highest of all the parameters (λ_5=0.429). So H6 is strongly supported.

The last three hypotheses link regret (H7a), thoughts (H8) and the attitudinal measure to the advertisement (H9) to behavioral intention. H7a indicates that Regret has a positive effect on behavioral intention since subjects who feel higher levels of this emotion should want to interact again with an entity to try to make amends (Roseman 2001). The model does not support this hypothesis (Regret>BI parameter's p=0.643). Similarly, the path between Thoughts and Behavioral Intention (H8) do not have a significant parameter (p=0.301). Finally, the parameter of the path between A_{Ad} and behavioral intention show a strong relationship, therefore H9 is supported by this model (λ_8=0.515, p=0.00).

Table 27 summarizes the results of the structural equation model that assess the fit of the model, and the standardized weight regressions and p values for each parameter.

Table 27
Summary of Regret Model

Hyp	Exogenous	Endogenous	SRW	p
H2a	Regret	Cognition	-0.076	0.323
H3.1/ H3.2.a	Regret	A_{Ad}[+]	0.073	0.257
H4	Control	A_{ad}	0.110	0.141
H5	Control	Cognition	0.196	0.045
H6	Cognition	A_{ad}	0.429	0.000
H7a	Regret	Beh Int.	0.029	0.643
H8	Cognition	Beh. Int	0.063	0.301
H9	A_{ad}	Beh. Int	0.516	0.000
	Fit measures			
B-S Bootstrap[++]		0.412		
$\chi 2$		22.41 df=21	P=0.376	
GFI		0.980		
TLI		0.994		
RMSEA		0.017		

[+] Nested model comparisons p=0.144
[++] 2000 samples bootstrap

Regret had no significant effects on this model. The reasons why H3.1 and H7a were not supported are not possible to establish in this study but there is the possibility that subjects who felt a self-referential emotion like regret might have transferred the blame to the ad, the experiment, the researcher or other circumstances. The dynamics of emotions through time (Kappas 2001) and the self-defense mechanisms activated by these type of emotions (Kitayama, Marcus and Matsumoto 2001) are definitively interesting areas to explore in depth in future research.

Another possibility is that feelings of regret were not as strong as required to create a need to redeem oneself (M=2.44 where the maximum is 5). One of the functions of negative self-referential emotions is to elicit a need for change. However this need for change can cause anxiety in a person (Zeelenberg, van Dijk, Manstead and van der Pligt

2000). Therefore, it might be necessary to create stronger manipulations to cause more acute self-conscious emotions like regret.

As it was expected, Control did not affect directly the attitudinal measure but it had a significant positive effect on subjects' thoughts about the ad. It seems that higher levels of control do not have per se a meaning for attitudinal measures but as soon as the control perceptions are filtered as a conscious evaluation compared with the subject's cognitive structures, this advertisement trait becomes an important element for higher levels of attitude toward the ad.

Results of guilt model

The guilt model reiterates the general model presented in Figure 5 except for the particular items that measure this emotion and the specification of the signs of the paths.

The Bollen-Stine corrected *p*-value, the most important measurement in cases where bootstrapping techniques are used, indicates a good fit of the data since the p is significantly higher than 0.05 (p=0.30). The inference index (GFI=0.978) and the descriptive indices (TLI=0.984, RMSEA=0.030) state the excellent fitness of the model.

The critical ratios of the parameters, and subsequently the p-values, also seem to create a more significant model than the Regret model.

The first parameter reported is the link between guilt and cognition about the ad (H2b). The p for this parameter does not reach significance (p=0.118). This means that feelings of guilt did not influence the creation of thoughts about the ad. The model supports hypothesis (H2b).

H3.1 tests the role of involvement as a moderator of the relationship between emotion and attitude. The first step to determine the validity of this hypothesis is to

compare the models' nested model comparison's p-value with the recommended value. Since this model's value is smaller than the recommended 0.05 (p=0.035) it is appropriate to analyze the differences of the Guilt>A_{Ad} path between the High Involvement and Low Involvement samples.

The result of the nested models matches Hypothesis 3.1 since in the high involvement model the path is not significant (p=0.809) but in the Low Involvement model the path is statistically significant (p=0.047). These results indicate that the hypothesized moderation exists in the guilt model.

Since H3.1 is supported by the model, the next hypothesis to test is H3.2.b. This hypothesis theorizes a positive relationship between Guilt and A_{Ad} in the low involvement condition. The parameter of the Guilt>A_{Ad} path is statistically significant (p=0.047) and the parameter is valenced positively as forecasted (λ_2= 0.181). The Guilt model supports hypothesis H3.1, H3.2.b and therefore H3 is fully supported in this model.

In the hypotheses development section it was established that control of the ad has no direct effect on attitudes toward the ad (H4). At the same time control of the ad should influence positively the thoughts about it (H5). The parameter of the path between control and attitude toward the ad is not statistically significant (p=0.161) but the control>thoughts path's parameter is significant (p=0.038) and in the hypothesized direction (λ_4=0.263). Therefore, the model supports H4 and H5.

H6 tests the hypothesis that Thoughts about the ad will influence positively A_{Ad} . As in the Regret Model, the results of this parameter are very strong (p=0.000, λ_5= 0.433). H6 is strongly supported by the results of this model.

Behavioral intention is linked through paths exclusively to cognitions about the ad (H8) and A_{Ad}. (H9). The Guilt>BI parameter should be not significant as H7b predicts.

The results of these three parameters duplicate the results for regret model. Guilt>BI and Thoughts>BI are not significant (p=0.555 and p=0.287, respectively) so H7b is supported while H8 is not supported by the model. Meanwhile A_{Ad}.>Bi has a strong parameter (p=0.000, λ_5=0.560) so H9 is supported by the results of the model.

Table 28 lists the results of the structural equation model that assess the fit of the model, and the standardized weight regressions and p values for each parameter.

Table 28
Summary of Guilt Model

Hyp	Exogenous	Endogenous	SRW	p
H2b	Guilt	Cognition	-0.113	0.118
H3.1/	Guilt	A_{Ad}[+]	HI: -0.022	HI: 0.809
H3.2.b			LI: 0.181	LI: 0.047
H4	Control	A_{ad}	0.104	0.161
H5	Control	Cognition	0.263	0.038
H6	Cognition	A_{ad}	0.433	0.00
H7b	Guilt	Beh. Int.	0.036	0.555
H8	Cognition	Beh. Int.	0.065	0.287
H9	A_{ad}	Beh. Int.	0.516	0.000
	Fit measures			
B-S Bootstrap[++]		0.30		
$\chi 2$		24.23 df=20	P=0.232	
GFI		0.978		
TLI		0.984		
RMSEA		0.030		

[+] Nested model comparisons p=0.035
[++] 2000 samples bootstrap

The use of guilt as the emotion of interest brought stronger results than the regret model. The differences of the means of reget and guilt are statistically equal (M_{Guilt}= 2.59 M_{Regret}=2.44). This result might lead to the belief that feelings of guilt are more active or

stronger than feelings of regret. High control is one of the triggers of guilt and this offering of control makes the person who experiences this emotion more active in the interpersonal space, instead of the intrapersonal space. That is, while people who experience regret look for ways to amend what went t wrong internalizing the information given by feelings, people who feel guilt try to do something to change the situation beyond changing their beliefs (Roseman 2001).

Interestingly, the feelings of guilt did not affect the cognition measurement. The structural equation model seems to confirm the hypothesis that predicted that this emotion does not have usable information to create thoughts about the ad.

As in the regret model, control had no direct positive effect on attitude toward the ad. However control's link to the subjects' thoughts about the ad was significant, which in turn influenced the attitude toward the ad. This result partially confirms the hypothesis that control does not have any meaning for attitudes until is mediated by some type of cognitive effort.

Results of dislike model

Structural equation modeling is a useful technique to develop models of relationships between variables since the analysis of any model includes a description of relationships to add or edit out to obtain a model with a better fit (Bryne 2000). This was an important benefit of SEM since the application of the proposed model led to inappropriate indices of fit when used with the dislike measurements.

Based on modification indices, the parameters that linked the emotion (H7c) and the thoughts about the ad (H8) to behavioral intention were omitted. Another required change was the creation of a link between Control and Dislike. This relationship was

tested in the contrast analysis for H1c, but the model improved significantly by the addition of this parameter.

The adaptation of the model was mildly successful since the Bollen-Stine corrected *p*-value, indicates a good fit of the data (p=0.074) but the model does not fit the data as well as the regret and guilt models.

The indices of goodness of fit suggest that the model fits the data well. The chi-square p value is higher than 0.05 (p=0.066) and the descriptive indices also have below the recommended cut off point of RMSEA (0.046) or above the recommended point of GFI and TLI (GFI=0.971 and TLI=0.964).

H1c, the only H1 prediction included in the four structural equation models, echoed the results of the contrast analysis for the dislike variable. The structural equation model conveys that a high level of control reduces feelings of dislike (p=0.028, λ = -0.104). This is a similar argument of the dislike contrast analysis where people in the low control condition had stronger feelings of dislike than in the other three conditions.

As it was expected, dislike influenced the thoughts about the ad (H2c). The parameter of the path between these constructs is statistically significant (p=0.017) and in the hypothesized direction (λ_1= -0.210). Hypothesis H2c is supported by the data.

The model did not support the test of the hypothesis of involvement as a moderator between Dislike and A_{Ad} (H3.1). The nested model comparison's p-value was larger than the recommended 0.05 level (p=0.055). However, H3.2.c was supported by the data. That is, the parameter of the Dislike>A_{Ad} path is significant (p=0.045) and has a negative standardized regression weight (λ_2= -0.210). The combination of these results is hard to interpret since the involvement-as-moderator hypothesis was not statistically

significant but the emotion-attitude path's parameter is significant. Probably the most conservative conclusion about this hypothesis is to say that H3 is partially supported by the model.

Hypothesis 4 forecasts that control of the ad will have no effect on attitudes toward the ad. On the other hand control will influence positively the thoughts about it (H5). As in the previously presented models the parameter of the path between control and A_{Ad} is not statistically significant (p=0.147). The difference between this model and the models presented above is that the control>thoughts path's parameter is also not significant (p=0.057). Then the model supports hypothesis 4, but not H5.

Due to the sixth hypothesis of this study, it is expected that the thoughts about the ad will influence positively the attitude toward the ad. The results of this parameter are significant and powerful (p=0.000, λ_5= 0.397). H6 is strongly supported by the results of this model.

In the hypotheses development section it was predicted that dislike (H7c), Thoughts (H8) and attitudes about the ad (H9) will have statistically significant parameters in their paths to behavioral intention. The expected signs of the parameters are positive for Thoughts and Attitudes and negative for Dislike.

As explained earlier in the section, the paths from dislike and cognitions about the ad to the behavioral intention measure had to be taken out of the model to obtain adequate goodness of fit indices. This definitively means that the relationships hypothesized in H7c and H8 are not supported by the data. The Attitude toward the ad is the only path that has a significant parameter (p=0.000, λ_5=0.544) so H9 is supported by the results of the model.

A summary of the results of the structural equation model that assess the fit of the model, and the standardized weight regressions and the p values for each parameter is presented in Table 29.

Table 29
Summary of Dislike Model

Hyp	Exogenous	Endogenous	SRW	P
H1c	Control	Dislike	-0.210	0.028
H2c	Dislike	Cognition	-0.176	0.017
H3.1/ H3.2.c	Dislike	A_{Ad}[+]	-0.133	0.045
H4	Control	A_{ad}	0.098	0.147
H5	Control	Cognition	0.151	0.057
H6	Cognition	A_{ad}	0.397	0.000
H7c	Dislike	Beh. Int.	Not tested	NS
H8	Cognition	Beh. Int.	Not tested	NS
H9	A_{ad}	Beh. Int.	0.544	0.000
	Fit measures			
B-S Bootstrap[++]		0.074		
χ^2		31.49 df=21	p=0.066	
GFI		0.971		
TLI		0.964		
RMSEA		0.046		

[+] Nested model comparisons p= 0.055
[++] 2000 samples bootstrap

An interesting result of the model is how dislike's effects on the model were strong enough to create two significant paths to the thoughts and attitudinal measures. The power of this emotion might be explained by the nature of dislike. Feelings of dislike are negative, and directed to somebody else (the appraised source of the negative event) so instead of an inward directed change the subjects who felt more strongly this emotion felt the need to vent their feelings in the comments about the ad and the attitudes expressed.

Another explanation of the results of this model is the proximity of the measurement of dislike (measured by items like "Thinking that the ad was unattractive") to attitudinal measures that includes items like "I like this ad". A possible solution to this problem is to develop attitudinal or dislike scales that do not have such similar measures.

An even more interesting finding is the required addition of a path between control and dislike to obtain a model with good fit indices. The parameter of this path was significant and, as expected, negative, while the Control>Thoughts was not significant. The answer of the question of why control failed to influence the thoughts about the ad in the Dislike model eluded the measures and analysis used in this study. Maybe the experience of the negative emotion influenced the cognitive and attitudinal measures in such a way that subtle positive connotation of control was overridden by the feelings of dislike. The coexistence of mixed emotions and evaluations is an interesting issue for future research (Williams and Aaker 2002).

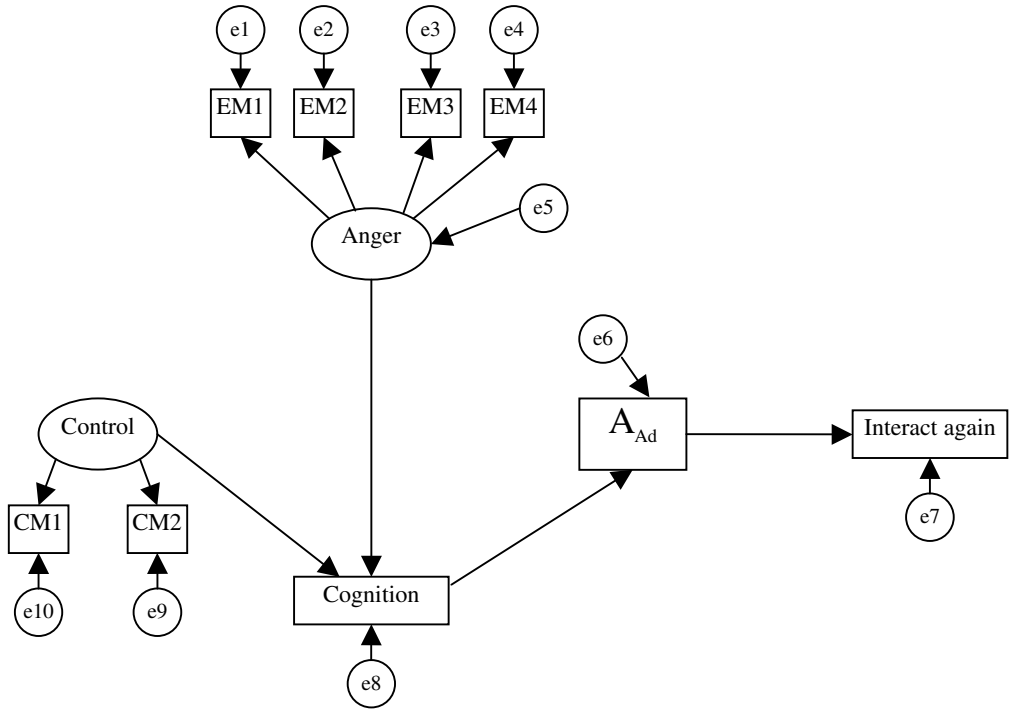
Results of anger model

The structural model for anger also required some changes from the original testing model. The structural equation model that showed satisfactory goodness of fit indices was a simplified version of the original since the Control> A_{Ad}, Anger>A_{Ad}, Anger>BI and Thoughts>BI paths had to be dropped out of the model. The need to simplify the model indicates that the parameters of these paths had very small impact on the model. The lack of significance of the parameters was expected for the Control> A_{Ad} path and for the high involvement Anger>A_{Ad} path but their lack of explanatory power provoked the need to drop them from the model in their totality.

One possible explanation for the need to simplify the model is the lack of variance of Anger (M=1.87, Standard deviation=0.784). This low variance can be explained since the items used to measure this emotion are heavily laden with meaning. For example, the scale asks about feelings of blood rushing through the body and thoughts of violence. These items might have larger variances in real world experiences but in a lab setting where the interaction is with an ad, the feelings and thoughts measured by these items, are not elicited in the subjects of the study (Izard 1992).

Figure 6 presents the simplified model tested using the anger measures

Figure 6
Revised Structural Equation Model for Anger



The simplification of the model was very successful since the goodness of fit indices suggest that the model approximates the data well. The bootstrap Bollen-Stine test indicates that the model fits well a large proportion of bootstrap samples (p=0.75).

The more traditional measures also indicate a good fit of the model. The p-value of the chi-square was higher than 0.05 (p=0.710), while the GFI and TLI were larger than the suggested cut off point of 0.90 (GFI=0.983 and TLI=1.000). Finally, RMSEA was smaller than the recommended 0.05 (RMSEA=0.000).

The simplified model for anger supports the hypothesis that determines that there is a negative relationship between anger and cognition about the ad (H2d). The significance of the parameter is less than 0.05 (p=0.033) and the standardized regression weight is negative (λ_1=-0.161).

Unfortunately, H3.1 was not tested directly in the model reported in this section but during the iterative process to create a model with good fit indices, the path between these two variables had to be taken out of the model. The need to take out the parameter strongly suggests that there is no relationship whatsoever between anger and the attitudinal measure. H3.1 is not supported by the data.

According to hypothesis 4 and 5, Control does not influence directly attitude toward the ad (H4) but has an effect on the thoughts about it (H5). As in the case of H3, the fourth hypothesis was not tested directly due to the impossibility to include the path in a model that fitted the data adequately. However the lack of significance of the path's parameter is reflected in the need to drop the path from the model, therefore H4 is supported by the data. The anger model on the other hand, supports H5. That is, the

parameter of the path that connects control to cognition is statistically significant (p=0.000) and with the expected positive valence (λ_4=0.131).

As expected, cognition about the ad is strongly related to attitude toward the ad (H6). The significance is below 0.05 (p=0.00) and the parameter, or standardized regression weight, is high (λ_5=0.443). The model supports H6.

The final three hypotheses link behavioral intention to the measures of emotion (H7d), cognition (H8) and attitude (H9). The Anger>BI and Cognition>BI paths were not tested in this model in order to obtain adequate fit indices. This strongly suggests that H7d and H8 are not supported by the data. The parameter of the path between A_{Ad} and behavioral intention is robust (p=0.000 λ_8=0.544) so the model supports H9.

Table 30 lists the most important elements of the structural equation model for anger.

Table 30
Summary of Anger Model

Hyp	Exogenous	Endogenous	SRW	P
H2d	Anger	Cognition	-0.161	0.033
H3.1/ H3.2.d	Anger	A_{Ad}[+]	Not tested	NS
H4	Control	A_{ad}	Not tested	NS
H5	Control	Cognition	0.133	0.007
H6	Cognition	A_{ad}	0.443	0.000
H7d	Anger	Beh. Int.	Not tested	NS
H8	Cognition	Beh. Int.	Not tested	NS
H9	A_{ad}	Beh. Int.	0.536	0.000
	Fit measures			
B-S Bootstrap[++]		0.754		
$\chi 2$		18.84 df=23	P=0.710	
GFI		0.983		
TLI		1.00		
RMSEA		0.00		

[+] Nested model comparisons not calculated
[++] 2000 samples bootstrap

The forced simplicity of the Anger model warranted high levels of goodness of fit, however, the reasons for the need to drop certain paths are worrying. Comparing the anger model with the other three models, it seems that the relationships among the variables were too fragile to accept the inclusion of paths that in the end would be non-significant.

It is interesting to consider two findings of the anger model. First, the negative emotion was able to create a significant link with the cognition about the ad. Second, control was also able to link significantly to cognition about the ad but neither of these two constructs were able to link to attitudes. It seems that for this particular model, the subtlety of control and the feelings of anger had to be processed as part of cognition. A good question to ask in future research based on this study is to determine what is the

effect on the model of asking for the thoughts about the ad in different points in time or even not asking about them to avoid a possible rationalization of the emotions felt.

General Discussion

The complexity of the hypotheses testing requires a clear summary of the hypotheses and the outcome of their tests. Table 31 lists all the hypotheses tested in the contrast analyses and the four structural equation models.

TABLE 31
Summary of Hypotheses Support

Hyp/AT	Contrast Analysis	Regret Model	Guilt Model	Dislike Model	Anger Model	Conclusion
H1a H1b H1c H1d	Supported Not supported Supported Not supported					H1: Partially supported
H2a H2b H2c H2d		Supported	Supported	Supported	Supported	H2: Supported
H3a1 H3.2.a H3.2.b H3.2.c H3.2.d		Not Supported Not Supported	Supported Supported	Not Supported Supported	Not Supported Not Supported	H3: Marginally supported
H4		Supported	Supported	Supported	Supported	Supported
H5		Supported	Supported	Not supported	Supported	Partially supported
H6		Supported	Supported	Supported	Supported	Supported
H7a H7b H7c H7d		Not Supported	Supported	Not Supported	Not Supported	H7: Marginally supported
H8		Not Supported	Not Supported	Not Supported	Not Supported	Not supported
H9		Supported	Supported	Supported	Supported	Supported

The first hypothesis is the main driver of this study since it is an exploration of how appraisal dimensions can be elicited in an interaction between a human and an

interactive advertisement. Unfortunately, H1 is partially supported since the manipulations of control and agency created stronger feelings of regret and dislike in the correct conditions but were unable to elicit higher levels of guilt and anger in the right conditions.

These results are not that surprising since the bedrock of this study is the well-respected Roseman's model of appraisals. Unfortunately, this theory does not have a high accurate prediction rate of appraisals as elicitors of emotions. Frijda and Zeelenberg (2001) warn that this is an endemic situation in all appraisal theories. That is, these theories cannot explain in empirical studies the large part of the variance in emotion elicitation. This problem brings forth the need to understand better the dynamics of appraisals and the context where emotions are elicited.

Another possible explanation of the lack of predicting accuracy of appraisal theory is the "artificiality" of translating a theory created to understand real relationships and events to communication processes mediated by interactive technologies. Researchers like (Allen, Machleit and Marine 1988) warn that the practice of application of theories and measurements developed in social psychology and other social sciences in consumer behavior should be cautiously tested and based on a good understanding of the theoretical implications of this use.

The criticism presented by these authors has its merits; however research has shown that media, particularly interactive, can be treated as a social actor by media users (Marakas, et al. 2000, Moon 2000, Moon and Naas 1998, Reeves and Naas 1996). In other words, users of media employ the rules that apply to social interaction between individuals when they interact with a medium.

A final explanation of the weak results of hypothesis 1 is the use of a student sample in this study. The subjects of the study participated in order to obtain extra credit for an undergraduate class. In no way whatsoever they were screened to obtain a sample of subjects personally interested in the product used in the experiment. Furthermore, the researcher was unable, due to human subjects regulations, to associate the benefit of extra credit with the subjects' performance. This lack of "real life" importance could explain in part the lack of solid support of the hypothesis about emotion elicitation and the set of hypotheses for behavioral intention. This issue is addressed later in the limitations section as well as in future research.

Hypotheses 2, 3 and 7 are of the utmost interest because these hypotheses lay out the effects of emotions on the processing of an ad in an interactive medium. It seems that in the experiment created for this study the emotions were first transformed into cognitions. This argument partially explains why the role of involvement as moderator (H3) and the effect of emotions on behavior (H7) were sporadic at best. H7 was flat out not supported by the data while H3 was supported exclusively in the guilt model.

Another explanation of the lack of effect of emotions and cognitions on behavioral intentions is the lack of variance of this last measure. The data suggests that subjects in the study were not interested in participating again since, most probably, they felt that there was no intense personal relevance during the experiment. This result indicate the need to replicate this study using subjects who have a more cognitive or affective investment on the issue to obtain larger variance.

The guilt model is very interesting since it is the only model where involvement played the perfect role of a moderator. More specifically, in the cases of low involvement

the attitude toward the ad was influenced by emotions while in the high involvement condition the subjects used exclusively their cognitions about the ad to determine their A_{Ad}.

It is also important to note that subjects used emotions selectively. The models support the proposed idea (H2) that self-referential emotions like guilt or regret are not used in the creation of thoughts about the ad since the source of the blame is internal and the emotions do not have any information to evaluate the ad. On the other hand negative emotions that are originated by another entity are used as evaluators to make things even (Roseman et al. 1996).

The other relevant focus of this study is the influence of control beyond its effect on emotion generation. As expected, control does not have a direct effect on attitudes since the positive feelings brought out by control can be overridden by the need to focus cognitive effort on the control of the information flow (Ariely 2000, Evelyn and Dunwoody 2001). However, at the moment that the person elaborates about the interaction with the ad, higher levels of control help the creation of positive thoughts about the ad.

In this study cognitions seem to play the role of "gatekeeper" of attitudes. In all the models, except in the Guilt/Low involvement condition, neither emotions nor control were linked significantly to A_{Ad} but the cognitions about the ad were strongly linked in the four models with the attitudinal measure.

A possible explanation of the crucial role of cognition in this study is the nature of the task that the subjects had to perform. Maybe the high use of their cognitive abilities provoked a high level of scrutiny of the whole experimental procedure.

Finally, it was disappointing to find all the hypotheses that specified the relationships of cognition and emotions with behavioral intention to be rejected. There is no clear explanation why H7 and H8 were consistently not supported by the models, expect for H7b that hypothesized the lack of significant parameter between guilt and behavioral intention. A possible explanation, albeit completely speculative, is that the feelings and cognitions present during the study were quickly forgotten or replaced by the subjects' attitudes toward the ad and used the attitude to influence their future plans of interaction with a different ad.

As Table 40 indicates many of the hypotheses were not consistently accepted or rejected by the models or the contrast analyses. Therefore, there is the possibility that there are confounding constructs that affect the testing of the hypotheses. Two of these confounding constructs were identified previously in the literature review and measured in the experiment while the other was a discovery during the data analysis that afterward was supported by the literature.

Confounding Variables

There are three constructs that could explain in part why the models are different in terms of the hypotheses supported. Previously it was mentioned that experience and knowledge could play mediator roles in a study like this one. These possible confounding effects were tested in the models by including the variables as mediators. The other variable that might create differences between the models is gender. There is a growing literature that suggests that females process information differently than males (e.g., Meyers-Levy 1989, Darley and Smith 1995). Also there are findings that support the hypothesis that females tend to express more freely their emotions (e.g., Brody 1999).

Unfortunately, the possible mediator role of gender cannot be tested in the structural equation models because the number of males who participated in the study is too low to use this technique (n=83). However analyses of variance were performed to probe the possibility of gender effects.

Expertise

In recent studies about interactive media it has been demonstrated that expertise and knowledge can affect various outcomes such as perceived interactivity (VCBG 2001, Macias 2001).

The measures of Web expertise and product knowledge that were obtained during the experiment were included in the structural equation models in order to explore the possible influence of these two variables. The two variables were included systematically in the four models as (1) mediators of control and emotions, (2) mediators of emotions and attitudes toward the ad and (3) mediators of emotions and behavioral intention. None of the 24 moderation models tested (3 mediation roles X 4 models X 2 confounding variables) led to better goodness of fit indices.

Gender

The first step to explore the role of gender in this study is to do a series of analysis of variance to ensure that there are no gender differences. Table 32 indicates that females expressed significantly higher levels of guilt than men (M_{fem}=2.70 M_{mal}=2.37, p=0.011). At the level of $p<0.10$ the other self-conscious emotion specifies similar results in which females had stronger feelings of regret (M_{fem}=2.51 M_{mal}=2.30, p=0.088).

It seems that there is the potential for gender as a moderator in the model. Unfortunately, this variable was not controlled by the research procedures so the number

of males subjects is too small to integrate in any form gender in the structural equation models. This is definitively an area of interest that should be explored in depth in other studies.

TABLE 32
Analyses of Variance
Gender as IV and Emotions as DV

Emotion	Females Mean n=157	Males Mean n=83	F
Regret	2.519	2.298	2.937***
Guilt	2.705	2.367	6.591**
Dislike	2.676	2.608	0.293
Anger	1.875	1.871	0.002

***p<0.05*
****p<0.10*

In summary this chapter explained the results of the four conditions needed to create the four discrete negative emotions of interest and the effects of these emotions in attitudes, cognitions and behavioral intention. Also the moderating role of involvement was investigated. Unfortunately, the four models had many different patterns of significant parameters. However the model for guilt had the closest resemblance to the original model.

The next chapter presents the conclusions of the experiment, the limitations of the study, the contribution that this study represents to theory and practice and the delineation of future studies based on the many questions left unanswered by this study.

CHAPTER 6

CONCLUSIONS, LIMITATIONS, CONTRIBUTION, AND RESEARCH AGENDA

This study explored the effects of control and agency in interactive media within the framework of appraisal theories. Roseman's model of appraisals in its latest version (2001), as well as other appraisal theories, sustain that emotions are elicited by an evaluation of an event based on few dimensions. The event in this study was an interaction with an interactive advertisement and the appraisals manipulated were agency and control. Another objective of the study was to determine the effects of control and the discrete negative emotions (regret, guilt, dislike and anger) elicited in the experiment on attitudinal and behavioral intention measures.

This chapter provides the conclusions, limitations, and contributions of the study. More importantly, this chapter also contains a research agenda designed to develop further the findings of this study and to counteract the current limitations of this research.

Conclusions

The results of the contrast analyses used to test hypotheses 1 indicate that the experimental combination of control, operationalized as control of the information flow of an interactive ad, and agency, operationalized as who caused the selection of the interactive ad, elicited higher levels of dislike and regret in the expected conditions. Anger and guilt were not statistically different across the conditions of the study.

The effects of the discrete emotions described by the four structural equation models (one for each emotion) were, as expected, diverse. In the structural equation model developed for guilt, this emotion linked significantly and positively with attitudes toward the ad exclusively in the low involvement condition. The dislike model indicated a significant and negative relationship between this emotion and cognitions and attitudes toward the ad. The model for anger suggested that this emotion had a significant and negative relationship with cognitions about the ad. Finally, regret had no effect on the model's attitudinal, cognitive or behavioral measures. The structural equation models also suggest that control is related indirectly to attitude toward the ad through cognitions about the ad.

This section focuses on the main findings of the study and their meaning under the point of view of the theories reviewed.

Agency and control

The agency (self/other) and control (high/low) manipulations were able to influence the elicitation of two very different emotions. One of the emotions was dislike while the other was regret. Both emotions are negative but they have very different consequences. Dislike is the emotion of rejection, a person wants to ignore or get away from someone or something that caused the negative event. On the other hand, regret is about redemption. This is the emotion that drives people to try to get a second chance.

These emotions that are so different were not created by the message inside the ad since the ads contained the same information. The emotions measured were elicited during the interaction with the ad. This is an important finding since the traditional

approach to research of emotions on communication studies is to focus on the content of the message.

These findings are relevant since digital media is everyday more able to respond to audience's needs and wants. Digital TV is a great example of the future, greater control of what to see, when to see it and, maybe, what will happen next in the program (Lewis 2001). The results of the study suggest that the emotional response to advertising might be different when people have more the control of the medium.

The results of this study might advance the literature on computer interaction and users (e.g., Marakas, et al. 2000, Moon 2000, Moon and Naas 1998, Reeves and Naas 1996). As in the stream of research of media and users, the results of this dissertation suggest that an user of an interactive interface (i.e., an interactive ad) use the schemas of interpersonal relationships and real events in the interaction with media.

Involvement

Unfortunately, the original proposal of this study planned the manipulation of involvement through a monetary incentive was impossible to implement in the university where the study was performed. This manipulation might have been able to create a stronger differentiation of motivation between the subjects who participated in the low involvement and the ones that were in the high condition than the manipulation used in this study.

Even though the results indicate that the involvement manipulation was not as effective as originally assessed, the guilt model offers a good example of the hypothesized effects of involvement. That is, only in the cases of low involvement the discrete emotion was used to partially assess the attitude toward the ad.

If the findings of the guilt model are an indication of real phenomena and not just artificially induced by the experiment or the data analysis, involvement is an important player since it dictates how emotions are used, directly or filtered through cognitions.

It is also important to acknowledge that other definitions of involvement might have a better fit with the emotional nature of this study. For example, the classic Celsi and Olson (1988) article defines felt involvement as a combination of situational and intrinsic motivation to process the informational stimuli (external and internal sources of interest, respectively). Even though intrinsic sources of personal relevance are not easy to create in an experimental study, this type of involvement might be a better motivator of a person's desire to interact again with an ad after a negative outcome or the elicitation of stronger emotions.

Discrete emotions

The uni-dimensional and bi-dimensional view of emotions sacrifices the complexity of the phenomena for parsimony (Lerner and Keltner 2000). The results of this study indicate even further that these approaches can lead to erroneous conclusions.

All the emotions of this research have the same valence, yet they had different effects on attitudes and cognitions. For example, even though guilt is a motivational inconsistent emotion, and therefore negatively valenced (Roseman 2001), the relationship between guilt and A_{Ad} in the low involvement condition was significant and positive. In other words, higher levels of guilt led to more positive attitudes toward the ad. Based on previous research (i.e., Yinon et al. 1976) this relationship might be curvilinear. This is an interesting area of research.

Another interesting result is how the type of emotions elicited in the interaction and the cognitions about a certain object are interrelated. Emotions that inflict internal struggle like guilt or regret were not used in the evaluation of the ad while the emotions that are closer to the "get even" mentality like dislike and anger had a negative effect on the cognitions about the ad.

All of these findings reinforce the need to study emotions as discrete emotions that should not be collapsed in positive and negative factors. Every emotion has its particular appraisals, motivations and actions tendencies, the clustering of even emotions that are very close like anger and dislike should be discourage in the study of emotion in the advertising field.

As was mentioned earlier in the theoretical background of this dissertation, flow is an affect-based state that has been found to occur on people while surfing the Web (Novak et al. 2000). Flow, according to Csikszentmihalyi (1997), is a strong affective state characterized by high levels of interest and attention elicited by a match between a task demand and the person's abilities.

In the experiment of this study some subjects might have felt a sense of flow. That is, the difficulty of the task and the complexity of the advertisement matched the subjects' interests and abilities. If that was the case, the effects of flow on the evaluation of the ad and emotion elicitation might have been significant. This issue is explored in depth in the future research section.

Cognition

Cognition as an element of the models developed was viewed initially as a necessary but not very interesting element of the model. After analyzing the data it is

important to note that cognition played a central role in the processing of ads in contexts like the one presented in the experiment.

Cognitions, in this study, played the role of gatekeeper of attitudes, or mediator variable, (Baron and Kenny 1984). Control and emotions were mostly unable to link themselves directly to attitude but they had significant paths to thoughts about the ad and, conversely, cognitions were strongly related to the attitudinal measure.

One possible explanation of the significant role of cognition on the evaluation of the ad derives from the task of the experiment. Some researchers have studied the effects of motivations of Web users and have found that people with specific motivations like looking for a particular piece of information drastically differ from Web users that are just surfing for fun (Li and Bokovac 1999, Hoffman and Novak 1996, Rodgers and Thorson 2000, Wolfinbarger and Gilly 2000). Then, it is possible that the highly cognitive task of learning about digital media players overwhelmed the affective side of the processing of the ad. The need for new studies that contrast Web surfing vs. looking for information motives should be performed before generalizing the results of this study to all types of users' motivations.

An interesting question is what would have happened if the questionnaire did not include the open-ended question that measured cognition. A possibility is that the subjects might have used more the raw emotion felt to assess the attitude toward the ad than a more detached judgment based on cognition. Maybe the results of this study are based on an artificiality that is not found in the real interaction between people and media. Now the big question is how can cognition be measured by unobtrusive techniques. Some promising new techniques are offered by researchers like Johnstone, et

al. (2001), who recently introduced a theory that correlates appraisal processes and vocal expressions.

Limitations

Even the most carefully planned research suffers from minor or major limitations. This is true in this study. One of the most common limitations of these type of studies is the use of a student sample. The need to change this practice is more urgent because current research shows the many problems of student samples (Peterson 2001). However, the exploratory nature of the study, the product used, and the technological knowledge necessary to participate in the study made a student sample a slightly less problematic decision.

Another limitation of this study is the lack of strong and clear paths in the structural equation models as well as strong and clear results in the contrast analysis. A possible explanation of these problems comes from critics of appraisal model. Studying emotions through appraisals is static. The reality of emotions is complex and dynamic and the current models are just simplistic snapshots of the emotional processes. This deficiency of current theories behooves that the study of emotions should take a more dynamic and systemic approach (Kappas 2001). However, it is important to convey that the mixed results could be more an expected finding than a limitation. Frijda and Zeelenberg (2001) mention that the explanatory power of appraisal theories is lower than other explanations of emotions.

An alternative explanation for this limitation is the use of a framework created in social psychology to be applied in real situation and not on mediated communication processes.

A methodological limitation is the lack of rigorous control of the subjects in the study. Instructions were very clear about the need to do the study in a short period of time and with no help from somebody else. Also the experimental Web site was designed to disallow the use of the Back button and an analysis of the pretest original database did not find any outliers of the time taken to do the experiment. However, there is no data that can ensure the researcher that the subjects followed the instructions faithfully.

Contribution

This study helps in the advancement of the understanding of emotions in consumer behavior in three ways. First, appraisal theories of emotion have not been systematically studied in the marketing literature (Bagozzi et al. 1999). The inclusion of these set of theories in consumer behavior research might help researchers to find answers to why people have different emotions when they evaluate the same event or stimulus.

Second, the effects of control of the Internet have been analyzed in terms of attitudes (Chen and Wells 1999), cognitive benefits and costs (Ariely 2000), and applying the individual difference locus of control (Hoffman, et al. 2000, Sohn and Leckenby 2001). However, the effect of control on emotions was unknown. This study suggest that emotions do have an effect on negative emotions and not necessarily is a negative, linear relationship.

Third, researchers have recently criticized the clustering of emotions in negative and positive dimensions (DeSteno et al. 2000, Ragunathan 2000, Ragunathan and Pham 1999). Instead, these researchers study the effects of distinct emotions (e.g., anger, joy). The results of this study indicate the importance of this conceptualization of emotions. For example, dislike and guilt are both negative in valence but they created some differences in the structural equation models. In one hand, guilt influenced positively an attitudinal measures directly and positively while dislike had to be mediated by cognition and had a negative impact on the evaluation of the ad.

The results of the study validate the idea that different levels of control, between and within media, create qualitatively different emotions. The forecast of a seamless integration of all types of telecommunication systems in many types of interfaces (e.g., monitors, PDAs, small displays in appliances) (Van Dijk 1999) might boost the importance of the understanding of control and its affective implications.

As was mentioned in the introduction of this research, interactions between interactive media and users can lead to negative emotions, partially because online entities are increasingly pressured to be profitable endeavors (Wingfield 2002). Of course, the desire of every company is to avoid at all costs the elicitation of negative emotions but sometimes the dissatisfaction of users is inevitable particularly when a company's future is not secure. Then, this study represents a relevant contribution by focusing on what happens when the interaction leads to negative events and suggests how these emotions affect the evaluation of the advertisements.

It seems that negative experiences are an inevitable fact in online interactions between companies and consumers. This inevitability does not mean that there is nothing

to do to counteract negative emotions. The first step to avoid the negative effects of a negative emotion is to recognize which emotions could be more prevalent in the interaction between consumers and messages. Then, coping strategies that are adequate to the emotion suffered by the user should be deployed. For example, Astleitner and Leutner (2000) describe two anger reduction strategies on computer-based interfaces.

The first strategy is based on the concept of constructive expression of anger (Averill 1993). This is a type of communication that helps in the reduction of anger by following specific guidelines to avoid switching the expression of anger in destructive communication. Astleitner and Leutner (2000) suggest that individuals who are angry should benefit from receiving instructions from the computer following Averill's (1993) rules. For example, if a computer "detects" anger in a user (for example, by analyzing facial expression), a message should be displayed in which the user is suggested to express his anger in an email or instant messaging system in a way that it might lead to a resolution.

Another strategy presented by Astleitner and Leutner (2000) is based on the concept of anger as a reaction of an obstacle. According to the authors anger should be subdued if the computer interface is able to convey a sense of flexibility. The simplest manner to obtain this sense of flexibility is by developing interfaces like Web sites that have a high level of hypertext capabilities.

Finally, with a bit of reticence due to the Machiavellian implications of the idea, Web sites and other Internet interfaces might use control and agency appraisals to transform negative affects in, still negative evaluations, emotions like regret or guilt that the agent of the failure is the user and not the interface. This is not too far-fetched,

considering the effectiveness of the door-in-the-face influence strategy used for ages by salesmen (O'Keeffe and Figge 1997).

Future Research

The exploratory nature of this study probably raises more questions than answers in the area of emotions and in interactive media. The three following sections will present the potential areas of research that were pinpointed by this study's findings and limitations.

Methodology and constructs

From a methodological perspective the next research step is to develop a procedure that will allow the recruitment of subjects who interact in real life with commercial Web sites. In the interactions between users and Web sites there might be some occasions where strong emotions are elicited by relevant events like making a decision that will have a financial (i.e., write personal information on the Web) or health risk (i.e., finding a doctor). An online experimental procedure deployed in these situations might have very interesting and valid results.

Measurement is a crucial element of any research, but it is particularly important for topics like affect and its effects. As was mentioned before, the role of cognition on the study was probably enhanced by an open-ended measure that asked about the thought the subject had while interacting with the ad.

Another issue that pertains to measurement and theoretical development is the difference between cognition and appraisal. Both are cognitive reactions to the interaction with the ad so it is not feasible to state that the cognitive measure is not correlated to appraisals of control and agency. The procedure required to tease out the differences of

cognition (measured in this research as number and valence of thoughts) and appraisals of control and agency is an excellent methodological question that requires further study.

As was mentioned in the hypotheses development, involvement plays many roles on message processing (Petty et al. 1993). This research focused exclusively on the moderator role of involvement on emotions but other issues about the individual like message scrutiny, or need for cognition as well as quality of arguments and other traits of the content of the ad should be investigated.

Emotions

Prior to the proposal of the study of other dimension of appraisals, the validation of the study in international or cross-cultural studies (e.g., Mesquita and Frijda 1992)or the examination of the effects of personal differences like age (e.g., Lewis 2001) it is important to assess the limitations of appraisal theories.

Frijda and Zeelenberg (2001), Kappas (2001) and other researchers have criticized structural appraisal models like Roseman et al.'s (1996) because they do not conceptualize appraisals as a dynamic process that is influenced by the context of the event. New models of appraisal theories like the one proposed by Smith and Kirby (2001) try to avoid this understanding of the appraisal processes. Unfortunately, Smith and Kirby's model as well as the models developed by Frijda and Zeelenberg (2001) are still in the conceptualization phase so there are still no constructs to test in applied research like an advertising context.

More particularly related to the findings of the study, it is suggested by the results that guilt has a positive effect on attitudes. However it seems plausible that the relationship is not lineal. Probably like other constructs like arousal (Holbrook and

Gardner 1998) the relationship is curvilinear. However, it is required to elicit strong emotional responses to obtain a real curvilinear function, a challenge of all emotion studies in the marketing and advertising literature (Bagozzi et al. 1999).

Most of the research of appraisal theories is applied in real interpersonal events not in the interaction with mediated media. Maybe the solution to create stronger emotions is to work in more ecological valid experiments that create experimental conditions in a natural setting like a real Web site where the stakes are higher than in a laboratory set up where some extra credit points or a small amount of money is at stake.

The effects of gender are widely recognized in some emotions studies (Brody 1999). However, appraisal theories have not focused on testing gender differences. In this study gender differences were found in the self-referential emotions so it might be interesting to obtain large enough samples of males and females to run multigroup structural equation models to test the possible moderation effect of gender in the parameters of the models or even in the creation of appraisals.

Other discrete emotions are of interest. Threat messages — *a.k.a* fear appeals — are commonly used in public service, health communication, and social awareness campaigns to promote change (behavioral or attitudinal) among audiences that might risk negative consequences if such messages are ignored (i.e., AIDS, alcohol moderation) (Witte and Morrison 2000). However, the range of emotions experienced may not be limited to just fear, but a host of other emotional responses, such as anger, anxiety, or sadness for example. Therefore, emotional response may be comprised of a system of discrete emotions instead of a uni-dimensional construct. These discrete emotions and their impact on message effectiveness have only begun to be measured in earnest (Dillard

et al. 1996, Nabi 1999). Perhaps the inclusion of appraisal theories will help understand why sometimes for some people a threatening message generates emotions like, say, dislike instead of the expected fear.

It is likely that users of the Internet experience more positive online experiences than negative so positive emotions should be explored in future research. For example, the manipulation of agency of a motive consistent outcome (i.e., winning an online trivia contest) can lead to feelings of liking (other agency) or pride (self agency) The understanding of the effects of these emotions on constructs like brand loyalty or attitudes is an interesting proposal.

As was mentioned earlier there are other affective constructs like mood and flow that might occur while interacting with a Web site or other interactive medium. Mood, for example, can be studied as a resource (Ragunathan and Pham 1999). In this framework, it might be possible to hypothesize that a person in a positive mood will accept more willingly and patiently the complex task and the negative outcome of the experimental procedure.

The flow construct is a challenge to measure and manipulate but it would be an interesting advancement of the understanding of online behavior to explore how flow can affect the elicitation of emotions and their impact on attitudes and other outcome measures. Interesting questions that can be raised in this topic are the possible inhibitory effects of flow on emotion elicitation since flow might tax the affective capacity of a person. Maybe flow makes emotions stronger and more distinct since a person experiencing a flow state is extremely interested in the task and any event during this

experience might create a very strong emotion. These and other questions about flow should be studied carefully in future research.

The universality of appraisals has not been perfectly demonstrated by empirical cross-cultural studies (Mesquita and Ellsworth 2001). A research opportunity is to determine if the event described in this study would be appraised similarly in other culture or countries where events might be understood differently, the social rules might accept the communication of certain emotions but not of others and the level of difficulty of the task and the interaction might be seen in a different way. For example, cultures with dissimilar levels of power distance might have diverse ways to evaluate the agency of an event.

Finally, measurement is an issue that is very important in the studies of emotion. Hazlett (1999) recently criticized paper and pencil, or screen and mouse, measurements due to the high cognitive load that is required to perform the task. At a more theoretical level, Frijda and Zeelenberg (2001) warn that an appraisal could really be an outcome of an emotion more than an antecedent of the feeling. The measurement of emotions and the appraisals will definitively be a vibrant area of study for years to come.

Interactive media

The definition of control in this study was purposely rigid but control can be viewed as different concepts. For example, a character's movement in a videogame or number of options available in an interactive medium are other types of control that might elicit particular emotions.

Further, control is just the tip of the iceberg of the concept of interactivity. Maybe a tool approach to interactivity (Stout et al. 2001), where interactivity is conceptualized

as an array of elements like video or email, would generate new hypotheses about how emotions are elicited or influence on Web-based media. For example, the presence of an email address might make a person less angry after a negative event since there is a way to vent this negative feeling.

Other definitions of interactivity that might help in the understanding of emotions include Steuer's (1992). The author's description of interactivity incorporates an element called vividness which in simple words is the presence on interactive media of video and other techniques that make a Web site a richer experience for the users' senses. The users' control of the level of vividness offered by an interface, emphasizing to the users the cost in computing needs and downloading times, might elicit particular types of emotions.

In trade magazines and newspapers there is anecdotal evidence that people get annoyed by Web advertisements like pop ups and interstitials (e.g., Rosenbaum 2002). An issue that warrants attention is how does control of localization, salience or duration of the advertisement influences the negative emotions generated by the obtrusiveness of the ad.

A combination of emotions and interactive media, in a futuristic environment is the Emotional Computing Lab at MIT. This laboratory is working on computers that are able to identify facial emotions and act correspondingly (Reynolds and Picard 2001). The capacity to detect emotions seems far-fetched in commercial applications, however if this can be possible it might revolutionize how computers create a more realistic relationships with their users and studies like the one presented in this dissertation can be used with a larger level of validity.

The issues raised in this chapter partially illuminate the long path that needs to be taken to understand the role of emotions and interactivity in the advertising field. This study is just a meek first step.

APPENDIX A

INFORMED CONSENT FORM

Informed Consent
Protocol Title: New Advertising and Decision Making

Principal Investigator: Jorge Villegas, Advertising Department,

College of Journalism and Communications

Please read this consent document carefully before you decide to participate in this study.

Purpose of the research study:

The purpose of this study is to examine the effects of interactive advertising in decision making.

What you will be asked to do in the study:

After answering information of your Web experience (i.e., time on line) on a Web-based questionnaire in a site that you will access any time from 5 PM 06/12

until midnight 06/14, you will be asked to interact with an interactive ad. After learning about the product advertised, you will be asked to answer some questions about the product and your feelings toward the ad. Finally some demographic information about yourself like age, gender will be asked.

Time required:

25 minutes

Risks and Benefits:

The risks are similar to the possible risks of working on a computer, so there is no major threat from this experiment. One of the benefits is that you are going to look at some new types of interactive advertising.

Compensation:

You will receive class credit as specified by your instructor.

Confidentiality:

Your identity will be kept confidential to the extent provided by law. Your information will be assigned a code number. The list connecting your name to this number will be kept in a locked file in my office. When the study is completed and the data have been analyzed, the list will be destroyed. Your name will not be used in any report.

Voluntary participation:

Your participation in this study is completely voluntary. There is no penalty for not participating. You do not have to answer any questions you do not want to answer. There will be no penalty for doing this.

Right to withdraw from the study:

You have the right to withdraw from the study at anytime without consequence.

Whom to contact if you have questions about the study:

Jorge Villegas, Prov. Assistant Professor, Department of Advertising, College of Journalism and Communications, 2093 Weimer Hall, PO Box 118400, 392-5059.

Whom to contact about your rights as a research participant in the study:

UFIRB Office, Box 112250, University of Florida, Gainesville, FL 32611-2250; ph 392-0433.

Agreement:

I have read the procedure described above. I voluntarily agree to participate in the procedure and I have received a copy of this description.

Participant: _____ Date: _____

Principal Investigator: _____ Date: _____

Please go to the following URL and follow the instructions

http://uts.cc.utexas.edu/~jovilo/iadstudy

If you have any problems or questions, please send me an email jvillegas@jou.ufl.edu

APPENDIX B
MESSAGE SCREEN FOR BEGINNING OF THE STUDY

We ask you to keep the following in mind:

- Please set aside enough time to do this study. If you do not have a continuous 10-15 minute period to set aside, please come back when you do. Once you start this study, you **CANNOT INTERRUPT** and come back to it later. In other words, you cannot log into the Web site more than once to complete the survey.

- Many of these screens **DO NOT ALLOW YOU TO GO BACK** to the previous screen. So please make sure you read the material on each screen properly before moving on to the next one.

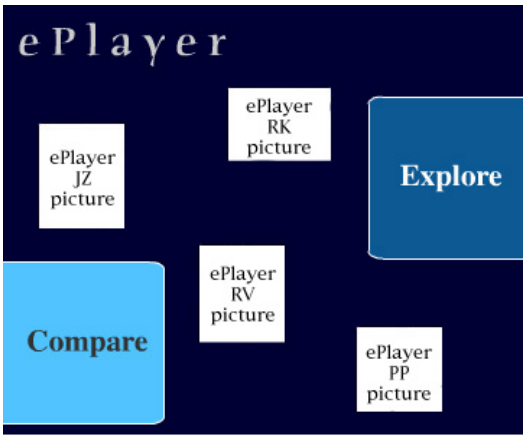
- Finally, please complete the survey by yourself and **DO NOT DISCUSS WITH OTHERS** when answering questions.

APPENDIX C

High Control Ad Screens

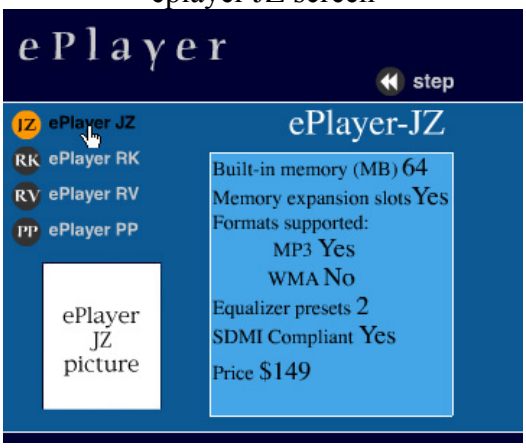
Initial screen (animation)

Second screen

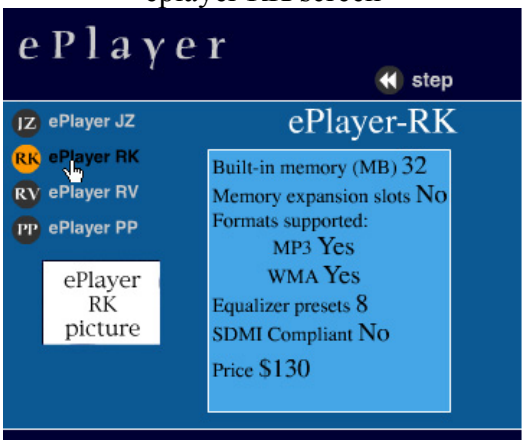


Third screen

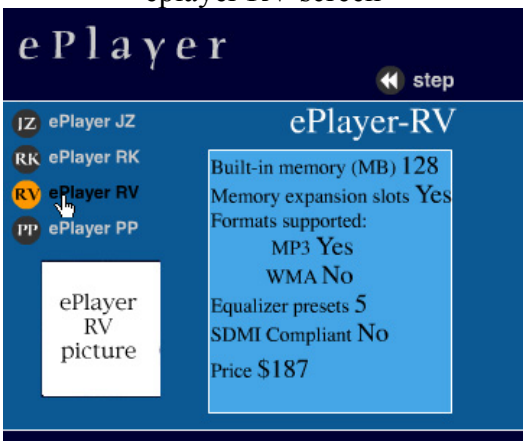
eplayer JZ screen



eplayer RK screen



eplayer RV screen



eplayer PP screen

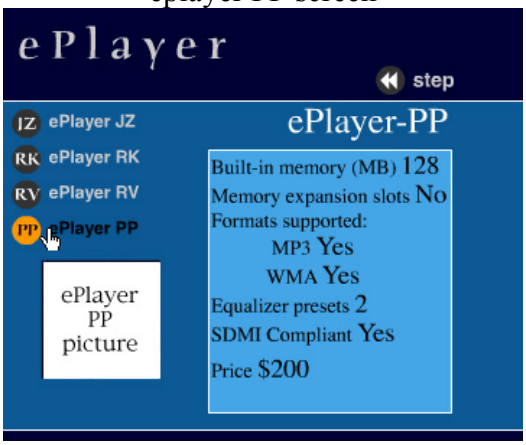
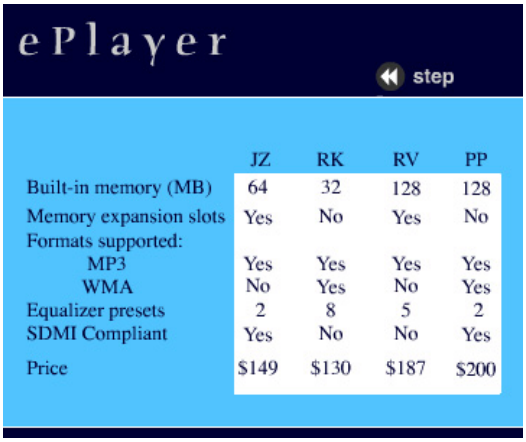


Table screen

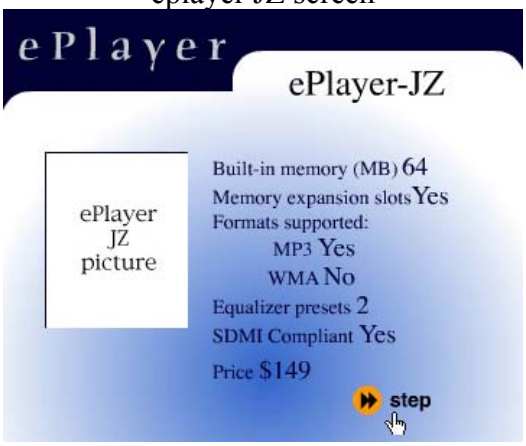


	JZ	RK	RV	PP
Built-in memory (MB)	64	32	128	128
Memory expansion slots	Yes	No	Yes	No
Formats supported:				
MP3	Yes	Yes	Yes	Yes
WMA	No	Yes	No	Yes
Equalizer presets	2	8	5	2
SDMI Compliant	Yes	No	No	Yes
Price	$149	$130	$187	$200

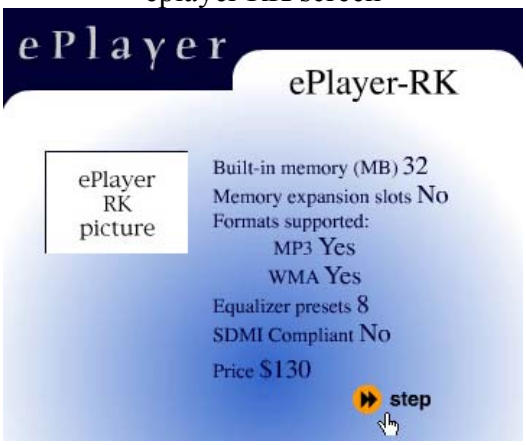
Low Control Ad Screens

Initial screen (animation)

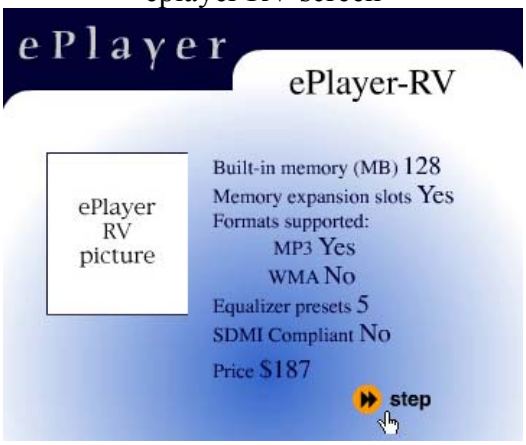
eplayer JZ screen



eplayer RK screen



eplayer RV screen



eplayer PP screen

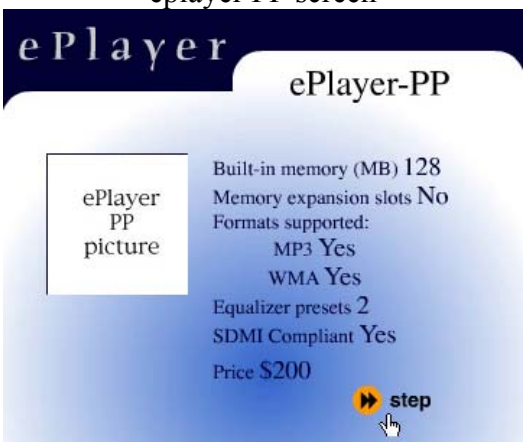
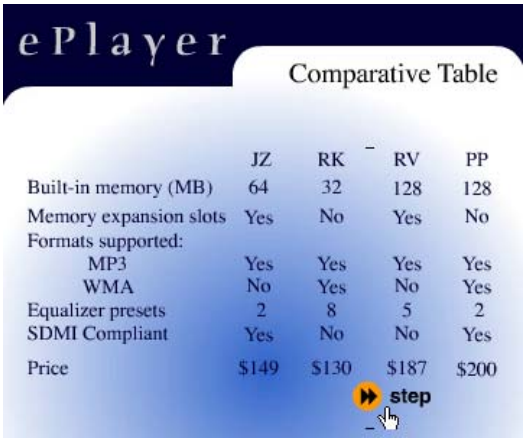


Table screen



APPENDIX D

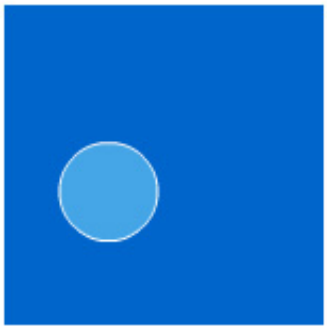
ONLINE QUESTIONNAIRE

Page 1

Flash Diagnostic

If you can't see the bouncy ball you need to download the macromedia shockwave plug-in before you start the study.

You can download the plug-in for free here



If you can see the bouncy ball you may start now.

START

Page 2

Study instructions

Thank you for participating in this study!

Please answer all the questions as accurately as possible. Remember that all responses are anonymous and all your personal information will be used exclusively to identify your answers.

We ask you to keep the following in mind:

* Please set aside enough time to do this study. If you do not have a continuous 10-15 minute period to set aside, please come back when you do. Once you start this study, you **CANNOT INTERRUPT** and come back to it later. In other words, you cannot log into the Web site more than once to complete the survey.

* Many of these screens **DO NOT ALLOW YOU TO GO BACK** to the previous screen. So please make sure you read the material on each screen properly before moving on to the next one.

* Finally, please complete the survey by yourself and **DO NOT DISCUSS WITH OTHERS** when answering questions.

(Remember that we need your SSN in order to notify the instructor of your class that you participated in this study)

Please type your social security number:

Continue

Web experience, use and knowledge about DMPs questionnaire

1. Please check the box next to each statement if you have performed the following activities online. Check as many boxes as apply to you.

- ☐ Ordered a product/service from a business, government or educational entity by filling out a form on the Web
- ☐ Made a purchase online for more than $100
- ☐ Created a Web page
- ☐ Customized a Web page for yourself (e.g. MyYahoo, CNN Custom News)
- ☐ Changed your browser's "startup" or "home" page
- ☐ Changed your "cookie" preferences
- ☐ Participated in an online chat or discussion (not including email)
- ☐ Listened to a radio broadcast online
- ☐ Made a telephone call online
- ☐ Used a nationwide online directory to find an address or telephone number
- ☐ Taken a seminar or class about the Web or Internet
- ☐ Bought a book to learn more about the Web or Internet

2. Approximately, how much time per week do you spend online?

- ○ 0 to 1 hr.
- ○ 2 to 4 hrs.
- ○ 5 to 6 hrs.
- ○ 7 to 9 hrs.
- ○ 10 to 20 hrs.
- ○ 21 to 40 hrs.
- ○ 41 hrs. or over

3. When did you start using the Web?

- ○ Less than 6 months ago
- ○ Over 6 months and up to a year ago
- ○ Over 1 year and up to 2 years ago
- ○ Over 2 years and up to 3 years ago
- ○ Over 3 years ago

4. If 1 were to represent a Web novice (beginner) and 10 were to represent a Web expert, what number would you say represents your experience level in using the WWW?

Please choose your experience level

5. If 1 were to represent a novice (beginner) user of digital media players and 10 were to represent an expert user of digital media players (devices to listen privately downloaded files like MP3s), what number would you say represents your experience level? Please choose a 0 if you do not know what is a digital media player

Please choose your experience level

Continue

Page 4

Task explanation

The objective of this study is to validate the effectiveness of an interactive ad technology as a learning tool in a highly cognitive context. A highly cognitive context is a situation where one needs to focus one's thinking on evaluating information in order to achieve some outcome, like making a decision.

In this study, you will be asked to evaluate relevant product features and to select a digital media player. Table 1 presents the product features that were considered the most important traits to evaluate in a digital media player by a large panel of average consumers. The table also presents the ratings for four specific models that the panel of consumers evaluated. Please take some time to examine the table carefully so you can understand how the panel of consumers rated the models.

Table 1

	Model 1	Model 2	Model 3	Model 4
Built-in memory (MB)	64	32	128	128
Memory expansion slots	No	Yes	Yes	No
Formats supported:				
MP3	Yes	Yes	No	Yes
WMA	No	No	Yes	Yes
Number of equalizer presets	0	4	5	2
SDMI Compliant	Yes	No	No	Yes
Price	$170	$140	$185	$200
Preference for this model	4.40	5.32	6.81	6.73

10=Like it a lot
0 = Do not like it at all

That is, consumers think that Model 1 is the worst option and Model 3 is the best considering the attributes mentioned in the table. If you analyze the table closely you will see that the typical consumer regards as more important the price and SDMI compliance while the number of preset equalizations are the least important factor.

In the following pages you will be asked to determine the best of four models manufactured by a company called ePlayer. In order to select the best model, consider the product features that the panel of consumers viewed as important and the information for the new models that you will find in an interactive ad. Please be advised that Table 1 will not be available for you to view again during the study.

Please click continue when you think you are ready to learn about the new models.

Continue

Page 5a

High involvement manipulation

Your effort to make a recommendation is critical. We expect to use this ad technology in many popular Web sites in the near future if savvy Web users like you do an extraordinary job learning from the ad. Also, since you are a Communications student in a well-respected university we firmly believe that your performance in this task will be the standard of great performance in subsequent studies.

Continue

Page 5b

Low involvement manipulation

Your effort to make a recommendation is required. We might use this ad technology in some Web sites in the future if this and many similar studies have comparable results. Also, since you are a Communications student in a university we firmly believe that your performance in this task will be the standard of performance in subsequent studies.

Continue

Page 6a

Agency (self) manipulation

You can select which type of ad you want to see, while other subjects in this study will have no choice.

Would you like to see an ad that: (Please select the option that best reflects your preference)

Has a lot of useful information but takes a long time to download?	○ ○ ○ ○ ○ ○ ○ ○ ○	Does NOT have a lot of useful information but takes a short time to download?

Continue

Page 6b

Agency (other) manipulation

You DO NOT have the choice of selecting the type of ad you will see although other subjects in this study are given a choice by responding to the following question.

YOU CANNOT ANSWER THIS QUESTION

Would you like to see an ad that: (Please select the option that best reflects your preference)

Has a lot of useful information but takes a long time to download?	○ ○ ○ ○ ○ ○ ○ ○ ○	Does NOT have a lot of useful information but takes a short time to download?

Please click the continue button to see the interactive ad.

Continue

Page 7a

Control (high) manipulation

You can navigate this ad as much as you want so you can obtain the information required to select the best model out of the four models manufactured by ePlayer. Please click continue until you have seen the four models in this ad.

Continue

Page 7b

Control (low) manipulation

You can read this ad as many times as you want so you can obtain the information required to select the best model out of the four models manufactured by ePlayer. Please click continue until you have seen the four models in this ad.

Continue

Page 8

Recommendation

Please make a recommendation based on what you learned about the models and the preferences of average consumers.

I believe that the best model, for an average consumer, is:

Continue

Page 9

Please wait page

Please wait...

Page 10

Outcome of recommendation

Your recommendation is **definitively not the best option** when compared to the opinions of the panel of average consumers. Actually, you selected the worst model of the four presented in the ad.

Please continue...

Continue

Page 11

Emotions, cognitions and involvement questionnaire

1. Please list all the thoughts and feelings that you had while you were interacting with the ad

2. Please list the model names that you remember from the interactive ad

3. Please list all your thoughts and feelings that you had after you received the news of your result.

4. Please describe the emotions that you felt as soon as you received the news about your performance.

	Not at all				Very strong
Felt cold toward the ad	○	○	○	○	○
Felt a sinking feeling	○	○	○	○	○
Felt blood rushing through my body	○	○	○	○	○
Felt closed to the ad	○	○	○	○	○
Felt on guard	○	○	○	○	○
Felt tension in my head	○	○	○	○	○
Felt that I'd explode	○	○	○	○	○
Felt tension in my face	○	○	○	○	○

5. Please describe the thoughts that you had as soon as you received the news about your performance.

	Not at all				Very strong
Thought of violence toward the ad	○	○	○	○	○
Thought that I disapproved the ad	○	○	○	○	○
Thought about a lost opportunity	○	○	○	○	○
Thought that I shouldn't have done what I did	○	○	○	○	○
Thought how unattractive the ad was	○	○	○	○	○
Thought that I was wrong	○	○	○	○	○
Thought how unfair the ad was	○	○	○	○	○
Thought of what a mistake I made	○	○	○	○	○

6. Indicate the button that best describes your involvement during this study .

	Completely disagree				Completely agree
I was highly involved while learning about the players.	○	○	○	○	○
I spent a lot of time thinking about the players before making a decision.	○	○	○	○	○
It seems unlikely to me that my performance in this study will affect the launching of this type of advertising technology.	○	○	○	○	○

Continue

Page 12

Control and agency questionnaire

1. Indicate the button that best describes your opinion for the following

I believe that I had no control at all over the ad.	○	○	○	○	○	○	○	○	○	I believe that I had a lot of control over the ad.
I was able to control the ad	○	○	○	○	○	○	○	○	○	I was unable to control the ad
I believe that I didn't choose how to learn about the digital players	○	○	○	○	○	○	○	○	○	I believe that I choose how to learn about the digital players
I believe that somebody else chose how I was going to learn about the digital players	○	○	○	○	○	○	○	○	○	I believe that nobody else chose how I was going to learn about the digital players

Page 13

A_{Ad}, BI and Demos Questionnaire

1. Please indicate if you agree with the following statements

	Strongly Disagree				Strongly Agree
I like this ad	○	○	○	○	○
This ad is entertaining	○	○	○	○	○
This ad is useful	○	○	○	○	○
This ad is important	○	○	○	○	○
This ad is interesting	○	○	○	○	○
This ad is informative	○	○	○	○	○
I would enjoy seeing this ad again	○	○	○	○	○
This ad is good	○	○	○	○	○

	Definitively No			Definitively Yes
If I find an ad like this on a Web site I will interact with it	○	○	○	○

2. The evaluation of the ad is over, but would you like to try again to interact with a very similar ad for a different product tomorrow or early next week?

○ Yes
○ No

This is the Final Part! Please answer these questions about yourself to recieve the extra credit.

1. What is your gender?

○ Male
○ Female

2. In what year were you born?

19☐

3. What is your major?

○ Advertising
○ Journalism
○ Public Relations
○ Telecommunications

4. What is your current academic status?

- Freshman
- Sophomore
- Junior
- Senior
- Graduate student

5. Please write your name (Last, first)

6. Please indicate the class for which you want to use your extra credit points.

- ADV 3000
- ADV 4101
- ADV 3501
- RTV 3000

Continue

Page 14

Debriefing and thanks

Thanks for participating in this study!

The real purpose of this study is to explore the effects of interactivity on a user's negative emotions. In order to create negative emotions in this study, you learned that you did not choose the adequate digital player. The truth is, all options are adequate selections. The program that runs this experiment does not differentiate among the solutions presented by the subjects so everyone receives a negative outcome.

Let me know if you have any questions or comments about this study and please do not to divulge the nature of this experiment to any other past or future participant of this study.

THANKS AGAIN!

PI: Jorge Villegas (jvillegas@jou.ufl.edu, Phone: 392-5059).

Click HERE to close

If you have any questions, please e-mail them to the following address: jvillegas@jou.ufl.edu

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VITA

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Jorge has taught at the undergraduate level at ITESM and UT-Austin in their schools of business before joining UF. His research interests are emotional response in interactive and traditional media and mental health communication in national and international settings.

Some of his academic accomplishments are publishing articles in *Health Education Research* and the *Proceedings of the AAA*, winning several fellowships from organizations like ITESM, CONACYT, and the University of Texas and research awards from the University of Florida and the American Academy of Advertising. He has participated in research funded by federal organizations like the NIMH.

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